

From: Chan, Christina
Sent: Wednesday, November 14, 2001 6:05 PM
To: Landsman, Robert; STIC-Biotech/ChemLib
Subject: RE: rush 09/257,272

Please rush. Thanks Chris

-----Original Message-----

Fr m: Landsman, Robert
Sent: Wednesday, November 14, 2001 6:03 PM
To: Chan, Christina
Subject: rush 09/257,272

chris - can you rush this? its a transfered amended "2" which needs an oligo search. thanks. bob

COMMERCIAL DATABASES ONLY:

oligo search of at least 30 contiguous amino acids of SEQ ID NO:2

oligo search of at least 30 contiguous amino acids of SEQ ID NO:4

thanks

Robert Landsman, Ph.D.
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Searcher: _____
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TYPE OF SEARCH:
NA Sequences: _____
AA Sequences: 2
Structures: _____
Bibliographic: _____
Litigation: _____
Full text: _____
Patent Family: _____
Other: _____

VENDOR/COST(where applic.)
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Sequence Sys.: 02
WWW/Internet: _____
Other (specify): _____

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OM protein - protein search, using sw model

Run on: November 15, 2001, 10:06:28 : Search time 34.67 Seconds
(without alignments)
732.664 Million cell updates/sec

Title: US-09-257-272-2

Sequence: 1 MHSLOFFSVACSLAALLP.....SYSEVCRCPVSPVMPQMS 419

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 412676 seqs, 60623988 residues

Word size : 30

Total number of hits satisfying chosen parameters: 32

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :

A_Geneseq_0601:*

1:	/SIDSB/gcgdata/geneseq/geneseqp/AA1980.DAT:*
2:	/SIDSB/gcgdata/geneseq/geneseqp/AA1981.DAT:*
3:	/SIDSB/gcgdata/geneseq/geneseqp/AA1982.DAT:*
4:	/SIDSB/gcgdata/geneseq/geneseqp/AA1983.DAT:*
5:	/SIDSB/gcgdata/geneseq/geneseqp/AA1984.DAT:*
6:	/SIDSB/gcgdata/geneseq/geneseqp/AA1985.DAT:*
7:	/SIDSB/gcgdata/geneseq/geneseqp/AA1986.DAT:*
8:	/SIDSB/gcgdata/geneseq/geneseqp/AA1987.DAT:*
9:	/SIDSB/gcgdata/geneseq/geneseqp/AA1988.DAT:*
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14:	/SIDSB/gcgdata/geneseq/geneseqp/AA1993.DAT:*
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16:	/SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
17:	/SIDSB/gcgdata/geneseq/geneseqp/AA1996.DAT:*
18:	/SIDSB/gcgdata/geneseq/geneseqp/AA1997.DAT:*
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20:	/SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
21:	/SIDSB/gcgdata/geneseq/geneseqp/AA2000.DAT:*
22:	/SIDSB/gcgdata/geneseq/geneseqp/AA2001.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	419	100.0	419	20	AAV30518
2	419	100.0	419	20	AAV22320
3	419	100.0	419	21	AAV97144
4	419	100.0	419	22	AAV97570
5	410	97.9	419	18	AAV17837
6	410	97.9	419	18	AAV00932
7	410	97.9	419	19	AAV75740
8	410	97.9	419	20	AAV86203
9	410	97.9	419	21	AAV10648
10	410	97.9	419	21	AAV29048
11	410	97.9	419	21	AAV70749

12	410	97.9	419	21	AAV70982	Human vascular end
13	410	97.9	419	22	AAV37605	Human VEGF-C. Hom
14	393	93.8	399	20	AAV86237	Human VEGF-C. full
15	350	83.5	350	20	AAV30519	A truncated vascul
16	350	83.5	350	20	AAV2321	Truncated human VE
17	350	83.5	350	21	AAV97145	Human VEGF-2 prote
18	350	83.5	350	22	AAV97577	Human vascular end
19	332	79.2	419	18	AAV11478	Human growth facto
20	312	74.5	418	20	AAV08284	Human growth facto
21	309	73.7	350	16	AAV82586	Vascular endotheli
22	309	73.7	419	18	AAV13833	Human vascular end
23	309	73.7	419	19	AAV75751	Human vascular end
24	301	71.8	307	20	AAV86222	Human VEGF-C trunc
25	296	70.6	302	20	AAV86223	Human VEGF-C trunc
26	291	69.5	297	20	AAV86224	Human VEGF-C trunc
27	286	68.3	292	20	AAV86225	Human VEGF-C trunc
28	113	27.0	113	20	AAV08285	Human growth facto
29	68	16.2	415	18	AAV00933	Human growth facto
30	68	16.2	415	19	AAV75742	Mouse VEGF-2 recepto
31	31	7.4	418	18	AAV00934	Mouse VEGF-2 recepto
32	31	7.4	418	19	AAV75743	Quail VEGF-2 recepto

ALIGNMENTS

RESULT	1
AAV30518	AAV30518 standard; Protein: 419 AA.
AC	AAV30518:
DT	16-NOV-1999 (first entry)
DE	Vascular endothelial growth factor-2 (VEGF-2).
XX	Human vascular endothelial growth factor-2; VEGF-2;
XX	vascular endothelial cell growth; endothelial cell migration;
XX	angiogenesis; blood pressure; blood flow; immune system disorder;
XX	immune cell; cancer; autoimmune disorder; blood protein disorder;
XX	ataxia telangiectasia; common variable immunodeficiency;
XX	diGeorge syndrome; HIV infection; HTLV-BLV infection;
XX	leukocyte adhesion deficiency syndrome; lymphopenia;
XX	phagocyte bactericidal dysfunction; severe combined immunodeficiency;
XX	Miskott-Aldrich disorder; anemia; thrombocytopenia; hemoglobinuria;
XX	allergy; asthma; allergic asthma.
OS	Homo sapiens.
XX	WO946364-A1.
PN	16-SEP-1999.
PD	10-MAR-1999; 99MO-US05021.
PF	13-MAR-1998; 98US-0042105.
PR	30-JUN-1998; 98US-0107997.
XX	(HUMA-) HUMAN GENOME SCI INC.
PA	Rosen CA, Cao L, Hu J;
PI	WPI; 1999-551399/46.
XX	N-PSDB; AA210523.
DR	New human vascular endothelial growth factor-2, used for treating, e.g.
XX	immune disorders and cancers
PT	Claim 12: Flg 1A-E; 222pp; English.
XX	The present sequence represents vascular endothelial growth factor-2
XX	(VEGF-2). The VEGF-2 polypeptides have activities similar to VEGF. The
CC	VEGF-2 polypeptides stimulate the growth of vascular endothelial cells,

CC stimulate endothelial cell migration, stimulate angiogenesis, decrease
CC blood pressure, and increase blood flow. The polynucleotides and
CC polypeptides can be used for preventing, treating or ameliorating a
CC medical condition. The VEGF-2 polypeptides or polynucleotides may be
CC useful in treating deficiencies or disorders of the immune system, by
CC activating or inhibiting the proliferation, differentiation, or
CC mobilization (chemotaxis) of immune cells. The etiology of these immune
CC deficiencies (or disorders) may be genetic, somatic, such as cancer or
CC some autoimmune disorders, acquired (e.g. by chemotherapy or toxins), or
CC infectious. Examples of immunologic deficiency syndromes include blood
CC protein disorders, ataxia telangiectasia, common variable
CC immunodeficiency, DiGeorge syndrome, HIV infection, HTLV-BLV infection,
CC leukocyte adhesion deficiency syndrome, lymphopenia, phagocyte
CC bactericidal dysfunction, severe combined immunodeficiency (SCIDs),
CC Wiskott-Aldrich disorder, anemia, thrombocytopenia, or hemoglobinuria.
CC They can also be used to modulate emostatic or thrombolytic activity.
CC Similarly allergic reactions and conditions such as asthma (particularly
CC allergic asthma) or other respiratory problems, may also be treated.

SQ Sequence 419 AA:

Query Match 100.0%; Score 419; DB 20; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 419; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MHSLGFFSVACSLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEQL 60
DB 1 mslglffsvacslaaallpgpreapaaaaafesglidsdaepdageatayaskdleeql 60
OY 61 RSVSSVDELMTLVLPYEWKMYKCOLRKGGWQNNRQANLNSTEEIRKRAAHYNTIELIK 120
DB 61 rsvssvdelmtlvlypeywmkykcolrkggwqnnreganlnsteeelkitaahyntelilk 120
OY 121 SIDNEMRKTCQMPREVCIDVGEKEFGVATNTFFKPCVSVYRGGCCNSGGLQCMNTSTSY 180
DB 121 sidnemrkqcmprcvcidvgekefgyatntffkpcvsvyrrggccnsegldcmntstsy 180
OY 121 sidnemrkqcmprcvcidvgekefgyatntffkpcvsvyrrggccnsegldcmntstsy 180
DB 121 sidnemrkqcmprcvcidvgekefgyatntffkpcvsvyrrggccnsegldcmntstsy 180
OY 181 LSKTLFEITVPLVPSQGPVPTISFANHTSCRCMSKLDVYRQVHSIIRSLPATLPQOQAN 240
DB 181 lsktlfelvplpsqgpvkptisfanhtscrcmskldvyqvnslirrspatlpqogaan 240
OY 241 KTCPTNYMNNHICICLAODEFMFSSDAGDDSTDGPHDLCGNKELDETCQCVCRAGIR 300
DB 241 ktcptnymnnhlciclaodefmfssdagddstdgphdgcgnkeldetccqcvcraglr 300
OY 301 PASCGPHKELDRNSQCVCNKLFPSCGANREPDENTCQVCCKRTCPNQPINPGKAC 360
DB 301 pascgphkeldrnscqvcnklfpscgaanreidentcqcvcckrtcpnqpinpgkac 360
OY 361 ECTESPQKCLGKKRPHHOTGSCYRRPCTNRQACPEGFSYSEVYCRVPSYWRPQMS 419
DB 361 ectespqckllgkkrfhhqtcscyrpctnrqkacepgfsyseevcrvpsywrpqlms 419

RESULT 2
AAI22320
ID AAI22320 standard; Protein: 419 AA.

XX AAY22320;

XX 22-SEP-1999 (first entry)

XX Full length human VEGF2 protein sequence.

XX VEGF2; vascular endothelial growth factor 2; angiogenesis; bone damage;

XX endothelial cell proliferation; tissue damage; therapy.

XX Homo sapiens.

XX US5932540-A.

XX PN 03-AUG-1999.

XX PD

XX 24-DEC-1997; 97US-0999811.
XX 24-DEC-1997; 97US-0999811.
XX 24-DEC-1997; 97US-0999811.
XX 08-MAR-1994; 94US-0207550.
XX 06-JUN-1995; 95US-0465968.
XX (HUMA-) HUMAN GENOME SCI INC.
XX Cao L, Hu J, Rosen CA;
XX WPI: 1999-443606/37.
XX N-PSDB: AAX84837.
XX Vascular endothelial growth factor 2 for wound healing and vascular
XX repair
XX Claim 1; Fig 1; 49pp; English.

This sequence is the vascular endothelial growth factor 2 (VEGF2),
CC of the invention. The isolated polypeptide is useful for stimulating
CC angiogenesis, by promoting the proliferation of endothelial cells, for
CC the treatment of a wound, or for the treatment of tissue or bone damage.

SQ Sequence 419 AA:

Query Match 100.0%; Score 419; DB 20; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 419; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MHSLGFFSVACSLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEQL 60
DB 1 mslglffsvacslaaallpgpreapaaaaafesglidsdaepdageatayaskdleeql 60
OY 61 RSVSSVDELMTLVLPYEWKMYKCOLRKGGWQNNRQANLNSTEEIRKRAAHYNTIELIK 120
DB 61 rsvssvdelmtlvlypeywmkykcolrkggwqnnreganlnsteeelkitaahyntelilk 120
OY 121 SIDNEMRKTCQMPREVCIDVGEKEFGVATNTFFKPCVSVYRGGCCNSGGLQCMNTSTSY 180
DB 121 sidnemrkqcmprcvcidvgekefgyatntffkpcvsvyrrggccnsegldcmntstsy 180
OY 121 sidnemrkqcmprcvcidvgekefgyatntffkpcvsvyrrggccnsegldcmntstsy 180
DB 121 sidnemrkqcmprcvcidvgekefgyatntffkpcvsvyrrggccnsegldcmntstsy 180
OY 181 LSKTLFEITVPLVPSQGPVPTISFANHTSCRCMSKLDVYRQVHSIIRSLPATLPQOQAN 240
DB 181 lsktlfelvplpsqgpvkptisfanhtscrcmskldvyqvnslirrspatlpqogaan 240
OY 241 KTCPTNYMNNHICICLAODEFMFSSDAGDDSTDGPHDLCGNKELDETCQCVCRAGIR 300
DB 241 ktcptnymnnhlciclaodefmfssdagddstdgphdgcgnkeldetccqcvcraglr 300
OY 301 PASCGPHKELDRNSQCVCNKLFPSCGANREPDENTCQVCCKRTCPNQPINPGKAC 360
DB 301 pascgphkeldrnscqvcnklfpscgaanreidentcqcvcckrtcpnqpinpgkac 360
OY 361 ECTESPQKCLGKKRPHHOTGSCYRRPCTNRQACPEGFSYSEVYCRVPSYWRPQMS 419
DB 361 ectespqckllgkkrfhhqtcscyrpctnrqkacepgfsyseevcrvpsywrpqlms 419

RESULT 3
AAI97144
ID AAI97144 standard; Protein: 419 AA.

XX AAY97144;

XX 22-DEC-2000 (first entry)

XX Vascular endothelial growth factor-2 (VEGF-2).

XX Vascular endothelial growth factor 2; VEGF-2; retina; angiogenesis;

XX treatment; injury; degeneration; photoreceptors; eye;

XX anglioid streaks; retinitis; pigmentosa; human;

XX KM

KM age-related macular degeneration: diabetic retinopathy.
XX
OS Homo sapiens.
XX
PN WO200045835-A1.
XX
PD 10-AUG-2000.
XX
PF 07-FEB-2000: 2000MO-US03047.
XX
PR 08-FEB-1999: 99US-0119179.
PR 12-FEB-1999: 99US-0119926.
PR 03-JUN-1999: 99US-0137796.
PR 22-DEC-1999: 99US-0171505.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
XX
PI Rosen CA, Alderson R, Melder R, Roschke V, Ruben SM:
XX
DR WPI: 2000-532862/48.
DR N-PSDB: AAA52080.
XX
PT Treating injury or degeneration of photoreceptors comprises
PT administering to a subject vascular endothelial growth factor 2
PT (VEGF-2)
XX
PS Claim 31: Fig 1a-e: 252pp: English.
XX
CC Administration of vascular endothelial growth factor 2 (VEGF-2)
CC to a patient can be used for treating injury or degeneration of
CC photoreceptors associated with e.g. angiod streaks, retinitis
CC pigmentosa, age-related macular degeneration, diabetic retinopathy,
CC etc. VEGF-2 promotes angiogenesis, the formation of new blood
CC vessels in the retina.
XX
SQ Sequence 419 AA:

Query Match 100.0%: Score 419: DB 21: Length 419:
Best Local Similarity 100.0%: Pred. No. 0:
Matches 419: Conservative 0: Mismatches 0: Indels 0: Gaps 0:

QY 1 MHSLGFFSVACSLAAALPGPREAPAAAAAFSSGLDLSAEPDAGEATYASKDLEOL 60
DB 1 mhsllgffsvacsllaaallpgpreapaaaaafesgldlsaepdageatayaskdleol 60

QY 61 RSVSYVDELMTVLYPEYWKMKQQLRKGMQHNRQANLNSRTEETIKFPAAHYNTETLK 120
DB 61 rsvsyvdelmtvlypeywkmykcqlrkgyqmhnrqanlnsrteetlkfpaahyntetlk 120

QY 121 SINEMKRTQCMREVCIDGKEFGVATNFEKPPCVSVYRCGCCNSEGLQCMNSTSY 180
DB 121 sinemkrcqcmrevcidgkfyatnlfkppcvsvyrcgcsnsegldqcmnstsy 180

QY 181 LSKTLEITVPLSQGPVYITISFAMHTSCRMKSLDYRVQVHSIIRSLPATLPOCOAN 240
DB 181 lsktleitvplsqgpyvitsfamtscrmksldyrvqvhslirslpatlpocogan 240

QY 241 KRCPTVYMNHNHCRCLAODFMFSSAGDSDGPHNDICGPKMKELDEETCCVCYRAGLR 300
DB 241 krcptvymnhnhcrclaodfmfssagdsdgdphndicgpnkeldetccvcyraglr 300

QY 301 PASCGPHKELDRNSCOCVCNKLFPSCGANREPDENTCQVCYCRKPCPRMQPLNPGKAC 360
DB 301 pascgphkeldrnsccvcnklfpscganrepdentcgcvcrcprmqplnpgkac 360

QY 361 ECTESPOKCLLAKRKHOTGSCYRRPCTNRKACBPESYSSEVCRVSWQRPQMS 419
DB 361 ectespqkcllkgrkhtgscyrpctnrkacbpesyssevcrcvswqrpqms 419

RESULT 4
AA97570

ID AA97570 standard: Protein: 419 AA.
XX
AC AA97570:
XX
DT 05-APR-2001 (first entry)
XX
DE Human VEGF-B protein sequence.
XX
KW Human: angiogenic protein; wound healing; vascular tissue repair;
KW peripheral arterial disease; critical limb ischemia; coronary disease;
KW angiogenesis; tumour; inflammation; diabetic retinopathy; psoriasis;
KW rheumatoid arthritis; autoimmune disease; allergy; cancer; therapy;
KW infectious disease; neurodegeneration;
KW vascular endothelial growth factor-B; VEGF-B.
XX
OS Homo sapiens.
XX
PN WO200075163-A1.
XX
PD 14-DEC-2000.
XX
PF 01-JUN-2000: 2000MO-US14925.
XX
PR 03-JUN-1999: 99US-0137796.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
XX
PI Rosen CA, Ruben SM, Hu J, Cao L:
XX
DR WPI: 2001-071057/08.
DR N-PSDB: AAA91004.
XX
PT New nucleic acid encoding angiogenic proteins, useful e.g. for
PT promoting healing of wounds and treating peripheral arterial disease,
PT critical limb ischemia or coronary disease -
XX
PS Claim 11: Fig 1: 244pp: English.

XX This sequence is vascular endothelial growth factor-B (VEGF-B),
XX which is an angiogenic protein of the invention. The angiogenic proteins
XX and the DNA sequences encoding them, are used to prevent, treat or
XX ameliorate disease and to detect diseases, or susceptibility, by
XX detecting mutations or the presence or amount of angiogenic protein
XX expression. Particularly they are used to stimulate wound healing,
XX growth of damaged bone and tissue, and for repair of vascular tissue,
XX especially peripheral arterial disease, critical limb ischemia or
XX coronary disease. Antagonists of the sequences are used to inhibit
XX angiogenesis in tumours and to treat inflammation (where associated with
XX increased vascular permeability), diabetic retinopathy, rheumatoid
XX arthritis or psoriasis. Agonists are also useful for stimulating
XX (lymph)angiogenesis. The proteins are also used to identify specific
XX binding agents (potential therapeutic agents) and to raise antibodies.
XX The antibodies are useful as therapeutic (ant)agonists; for detection,
XX purification and targeting of proteins for in vivo or in vitro diagnosis
XX (including imaging) or for therapy (including when linked to e.g. a label
XX or cytotoxin); and for immunotyping of cells; e.g. for detecting minimal
XX residual disease or haematopoietic progenitor/stem cells. It is also
XX contemplated that the sequences might be useful for treating a very wide
XX range of other disorders, e.g. autoimmune diseases; allergy; cancer;
XX infectious diseases (viral, bacterial, fungal or parasitic);
XX neurodegeneration, also as chemotactic agents or for stimulating
XX regeneration of the nervous system etc.

SQ Sequence 419 AA:

Query Match 100.0%: Score 419: DB 22: Length 419:
Best Local Similarity 100.0%: Pred. No. 0:
Matches 419: Conservative 0: Mismatches 0: Indels 0: Gaps 0:

QY 1 MHSLGFFSVACSLAAALPGPREAPAAAAAFSSGLDLSAEPDAGEATYASKDLEOL 60
DB 1 mhsllgffsvacsllaaallpgpreapaaaaafesgldlsaepdageatayaskdleol 60

QY 61 RSVSVDLMTLVLPPEYWMKMYKCOLRKSGMGNHNRQANLNSRTEETIKFAAHYNTILK 120
 CC ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 CC protein (flk-1bp) (see AAW17837) that binds to the receptor tyrosine
 CC kinase flk-1 expressed on vascular endothelial and other cells.
 Db 61 rsvsvdelmtlvlppeywmkmykcolrksgwmnreganlnstteetlkfaahyntelk 120
 CC The mature flk1bp can be secreted from host cells transformed with
 CC an expression vector including an isolated flk-1bp cDNA clone (see
 CC AAW68811). Flk-1bp can be used to isolate cells to which it binds,
 CC for use in studying the roles of such cells and of flk-1 in
 CC angiogenesis and angiogenesis. Angiogenesis inhibition or
 CC increased vascularisation may be clinically desirable (e.g. to
 CC suppress solid tumour growth or in wound healing, respectively).
 QY 121 SIDNEMRKTCMPREVCIDVGKEFGVANTFEKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
 CC ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 121 sidnemrkcmprcvcldvkgkfvgatltffkppcvsvyrcggcgnseqldcmntstsy 180
 CC The flk-1bp can be administered to treat conditions with defective
 CC or insufficient flk-1. Polypeptides may also act as carriers to
 CC deliver diagnostic/therapeutic agents to cells to which flk-1bp
 CC binds, to generate antibodies, and to identify flk-1bp antagonists
 CC useful for treating flk-1bp mediated conditions.
 QY 241 KTCPTNYMNMNHCICLAQEDFMFSSDAGDSTDFHIDICGNKELDEETCCVCRCAGLR 300
 CC ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 241 ktcptnymnmnhicrlaqedfmfssdagdstdgtfhdicgnpkeldeetccgcrcaglr 300
 CC The flk-1bp can be administered to treat conditions with defective
 CC or insufficient flk-1. Polypeptides may also act as carriers to
 CC deliver diagnostic/therapeutic agents to cells to which flk-1bp
 CC binds, to generate antibodies, and to identify flk-1bp antagonists
 CC useful for treating flk-1bp mediated conditions.
 QY 301 PASCGPHKELDRNSQCVCCKNLFPSCGAGNREFDENTCOCVCCKRTCPRNQPLNPGKAC 360
 CC ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 301 pascgphkeldrnscqvccknlfpscgagntrefdentccgcckrtcprnqplnpgkac 360
 QY 361 ECTESPQCKLLGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEECRCVPSYWRPQMS 419
 CC ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 361 ectespqckllgkfkfhqtcscyrrpctnrqkacepgfsyseecrcvpsywqrpqms 419

RESULT 5

AAW17837
 ID AAW17837 standard; Protein: 419 AA.

AAW17837;

13-JAN-1998 (first entry)

Human foetal liver kinase A binding protein flk-1bp.

Poetal liver kinase 1 binding protein; human; flk-1bp;

receptor tyrosine kinase; vasculogenesis; angiogenesis;

wound healing; tumour; therapy; antagonist; antibody.

Homo sapiens.

Location/Qualifiers

1..20

/label= Sig_peptide

21..419

/label= Mat.protein

/note= "(Claim 10)"

21..35

/label= N-terminal

/note= "(Claim 9)"

WO9717442-A1.

15-MAY-1997.

05-NOV-1996; 96WO-US17584.

08-NOV-1995; 95US-0554374.

(IMMUNEX CORP.

Lyman SD;

WPI; 1997-281031/25.

N-PSDB; AAT68811.

DNA encoding a human foetal liver kinase 1 binding protein - used

to treat conditions with insufficient protein, deliver agents to

cells and identify antagonists to treat protein-mediated conditions

Claim 1; Page 30-32; 43pp; English.

CC This polypeptide comprises a human foetal liver kinase 1 binding
 CC protein (flk-1bp) (see AAW17837) that binds to the receptor tyrosine
 CC kinase flk-1 expressed on vascular endothelial and other cells.
 CC The mature flk1bp can be secreted from host cells transformed with
 CC an expression vector including an isolated flk-1bp cDNA clone (see
 CC AAW68811). Flk-1bp can be used to isolate cells to which it binds,
 CC for use in studying the roles of such cells and of flk-1 in
 CC angiogenesis and angiogenesis. Angiogenesis inhibition or
 CC increased vascularisation may be clinically desirable (e.g. to
 CC suppress solid tumour growth or in wound healing, respectively).
 CC The flk-1bp can be administered to treat conditions with defective
 CC or insufficient flk-1. Polypeptides may also act as carriers to
 CC deliver diagnostic/therapeutic agents to cells to which flk-1bp
 CC binds, to generate antibodies, and to identify flk-1bp antagonists
 CC useful for treating flk-1bp mediated conditions.
 SQ Sequence 419 AA;

Query Match 97.9%; Score 410; DB 18; Length 419;

Best Local Similarity 100.0%; Pred. No. 0; Mismatches 0; Indels 0; Gaps 0;

Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

4 LGFFSVAGSLAALPGPREAPAAAAAFESGLDSDAEPDAGEATAYASKDLEQLNSV 63

4 lgffsvagslaaallpgpreapaaaafesgldsdapepdageatayskdlleqlnsv 63

64 SSVDELMTLVLPPEYWMKMYKCOLRKSGMGNHNRQANLNSRTEETIKFAAHYNTILKSID 123

64 ssvdelmtlvlppeywmkmykcolrksgwmnreganlnstteetlkfaahyntelkssid 123

124 NEMRKTCMPREVCIDVGKEFGVANTFEKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183

124 nemrktcmprcvcldvkgkfvgatntffkppcvsvyrcggcgnseqldcmntstsylsk 183

184 TLFETVPLSGCPKPYTISFANHTSCRCMSKLDYRQVHSITRSLPATLPCCQAANKTC 243

184 tlfetvplsgcpkpytisfanhtscrcmskldyrvqhsitrsipatlpccqaanktc 243

244 PTNYMNMNHCICLAQEDFMFSSDAGDSTDFHIDICGNKELDEETCCVCRCAGLRPAS 303

244 ptnymnmnhicrlaqedfmfssdagdstdgtfhdicgnpkeldeetccgcrcaglrpas 303

304 CGPHKELDRNSQCVCCKNLFPSCGAGNREFDENTCOCVCCKRTCPRNQPLNPGKACECT 363

304 cgphekeldrnscqvccknlfpscgagntrefdentccgcckrtcprnqplnpgkacect 363

364 ESPQCKLLGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEECRCVPSYW 413

364 espqckllgkfkfhqtcscyrrpctnrqkacepgfsyseecrcvpsyw 413

RESULT 6

AAW00932

ID AAW00932 standard; Protein: 419 AA.

AAW00932;

10-NOV-1997 (first entry)

Human Flt4 receptor tyrosine kinase ligand VEGF-C.

VEGF-C; Flt4; receptor tyrosine kinase; VEGFR-3; human;

vascular endothelial growth factor receptor-3; ligand;

angiogenesis; wound healing; lymph vessel; lymphangioma;

cancer; metastasis; therapy; diagnosis; antibody; inhibitor.

Homo sapiens.

Location/Qualifiers

1..102

/label= Prepro-peptide

32..227

Peptide

FT		/note= "preferred active fragment of VEGF-C, retaining Flt4 ligand activity (Claim 15) "
FT	Peptide	103..217
FT		/note= "preferred active fragment of VEGF-C, retaining Flt4 ligand activity (Claim 12) "
FT	Peptide	103..225
FT		/note= "preferred active fragment of VEGF-C, retaining Flt4 ligand activity (Claim 13) "
FT	Peptide	103..227
FT		/note= "preferred active fragment of VEGF-C, retaining Flt4 ligand activity (Claim 14) "
FT	Peptide	113..213
FT		/note= "preferred active fragment of VEGF-C, retaining Flt4 ligand activity (Claim 10) "
FT	Peptide	113..227
FT		/note= "preferred active fragment of VEGF-C, retaining Flt4 ligand activity (Claim 11) "
FT	Peptide	131..221
FT		/note= "preferred active fragment of VEGF-C, retaining Flt4 ligand activity (Claim 9) "
FT	Peptide	161..221
FT		/note= "preferred active fragment of VEGF-C, retaining Flt4 ligand activity (Claim 8) "
PN	WO9705250-A2.	
PD	13-FEB-1997.	
PE	01-AUG-1996;	96MO-FI00427.
PR	28-JUN-1996;	96US-0671573.
PR	01-AUG-1995;	95US-0510133.
PR	12-JAN-1996;	96US-0585895.
PR	14-FEB-1996;	96US-0601132.
PA	(UYHE-) UNIV HELSINKI LICENSING LTD OY.	
PI	Altalo K, Joukov V;	
DR	WPI: 1997-145688/13.	
DR	N-PSDB: AAT84276.	
PT	Flt4 receptor tyrosine kinase ligand and related nucleic acid - used to modulate growth of endothelial cells and for diagnosis of endothelial cell diseases	
PS	Claim 7: Page 112-113; 183pp; English.	
XX	This polypeptide comprises the pre-pro sequence of human VEGF-C, a novel ligand that binds specifically to human Flt4 receptor tyrosine kinase (VEGFR-3), stimulating phosphorylation of the receptor. Its sequence was deduced from a cDNA clone (AAT84276) obtd. from a PC-3 prostatic adenocarcinoma cell (ATCC CRL 1435) library. The polypeptide, or its active fragments, can be expressed in transformed or transfected host cells for use in claimed methods for detecting endothelial cells (e.g. to image lymphatic vessels, endothelial venules, Flt4 receptor in histochemical tissue) and also to modulate the growth of mammalian endothelial cells (e.g. to accelerate angiogenesis and to promote endothelial function of lymphatic vessels). Inhibitors of VEGF-C, such as antibodies, can be used to control endothelial cell proliferation, e.g. lymphangoma or metastatic cancer. Mouse and quatil VEGF-C sequences (see AAM00934-35) have also been isolated.	
XX	Sequence	419 AA;

Query Match	97.9%;	Score 410;	DB 18;	Length 419;
Best Local Similarity	100.0%;	Pred. NO. 0;		
Matches 410;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0
4 LGFFSVACSLAAALLPGREAPAAAAAEESGIDSDAEPDAGEATAVYSKDIEQLRSV 63				

[illegible]

The vascular endothelial growth factor C (VEGF-C) polypeptides have activities affecting growth and migration of vascular endothelial cells, promoting growth of lymphatic endothelial cells and lymphatic vessels, increasing vascular permeability, and affecting myelopoiesis. The products can be used for stimulating angiogenesis, for inhibiting angiogenesis, for stimulating lymphangiogenesis, treatment or prevention of lymphedema, and for stimulating lymphatic drainage.

CC of inflammation, oedema, elephantiasis, or Milroy's disease. They can
CC also be used to modulate myelopoiesis, e.g. treating granulocytopenia.
CC They can also be used for modulating the growth of endothelial cells.
CC They can also be used to stimulate lymphocyte production and maturation,
CC and to promote or inhibit trafficking of leucocytes between tissues and
CC lymphatic vessels or to affect migration in and out of the thymus.

XX Sequence 419 AA:

Query Match 97.9%; Score 410; DB 19; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 4 LGFFSVACSLAAALLPGPREAPAAAAAFESGLDSDAPDAGEATAYASKDLEQLRSV 63
DB 4 lgffsvacslaaallpgpreapaaaaafesglidsdaepdagatayaskdleqlrsv 63
OY 64 SSVDELMTVLYPEYWKMKCOLRKGMQHNROANLNSTTEETIKFAAHYNTTEILKSID 123
DB 64 ssvdelmtvlypeywkmykcqlrkkgwqhnrqanlnsrteetlkfaaahyntelklsid 123
OY 124 NEMRKTQCMRPREVCIDVGKEFGVATNTPFKPCVSVYRCGGCNSBGLOCMNTSTSYLSK 183
DB 124 newrktqcmrprevcidvgkefgvatntffkppcvsvyrcggcnsbglocmntstsylsk 183
OY 184 TLFETITVPLSQGPKPVITISFANHSTCRGMSKLDVYRQVHSIIRSLPATLPQCOQANKTC 243
DB 184 tlfeitvplsogpkpvtisfanhtscrcmskldvyryqvhslirslpatlpgcgaanktc 243
OY 244 PTNYMNMNHICRCIAOEDPFMSSDAGDSTDFHIDICGPNKELDEETCCQVCRAGLRPAS 303
DB 244 ptnymnmnhicrciaqedfmsdagdstdfhldcgnkeldetccqvcvcraglrpas 303
OY 304 CGPHKELDRNSGCVCCKNKLFPSCGANREFDENTCCVCCKRTCPRNQPLNPGKACACCT 363
DB 304 cgphekeldrnscgcvccknkllfpgcganrefdentccgcckrtcpnrnplnpgkacacct 363
OY 364 ESPQCKLLGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCPVPSYW 413
DB 364 espqckllgkfkfhqtcscyrpctnrqkacepgfsyseecrcvpsyw 413

RESULT 8
AAM86203 standard; protein: 419 AA.

XX AAM86203;

DT 16-FEB-1999 (first entry)

XX Human vascular endothelial growth factor (VEGF)-C sequence.

KW VEGF: VRF; vascular endothelial growth factor: VEGF-related protein;
KW recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia;
KW coronary; collateral vessel development; cell growth; migration; heart;
KW lower limb ischaemia; stroke; peripheral vascular disease; intestine;
KW wound healing; skin; vascular permeability.

OS Homo sapiens.

XX W09849300-A2.

PD 05-NOV-1998.

PE 20-APR-1998; 98WO-US07801.

PR 25-APR-1997; 97US-0842984.

PA (COLL-) COLLATERAL THERAPEUTICS.

PI Bohlen P;

XX

DR WPI; 1999-009426/01.

XX New truncated vascular endothelial growth factor-related protein
PT subunits - lack part of the N-terminal sequence, used to stimulate
PT angiogenesis, e.g. for treating heart disease and ischaemia
XX
XX Disclosure; Fig 1; 113pp; English.

This represents the amino acid sequence of human vascular endothelial
growth factor (VEGF)-C protein. The invention provides truncated VRF
(VEGF-related protein) subunits that have at least one amino acid
N-terminal to the first Cys of the core sequence deleted. Host cells
transformed or transfected with expression vectors containing nucleic
acids encoding the truncated VRF subunits are used to produce the
truncated proteins recombinantly. The truncated VRF subunits, optionally
expressed from gene therapy vectors, have in vivo and in vitro angiogenic
activity and are used to stimulate angiogenesis, particularly coronary
collateral vessel development. In cases of cardiac ischaemia: to stimulate
endothelial cell growth and migration in vitro; to treat heart disease;
to treat ischaemia (e.g. cardiac, chronic coronary or chronic lower limb
ischaemia; stroke and peripheral vascular disease); to promote healing of
wounds (of skin or intestines), and to increase vascular permeability.

Query Match 97.9%; Score 410; DB 20; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 4 LGFFSVACSLAAALLPGPREAPAAAAAFESGLDSDAPDAGEATAYASKDLEQLRSV 63
DB 4 lgffsvacslaaallpgpreapaaaaafesglidsdaepdagatayaskdleqlrsv 63
OY 64 SSVDELMTVLYPEYWKMKCOLRKGMQHNROANLNSTTEETIKFAAHYNTTEILKSID 123
DB 64 ssvdelmtvlypeywkmykcqlrkkgwqhnrqanlnsrteetlkfaaahyntelklsid 123
OY 124 NEMRKTQCMRPREVCIDVGKEFGVATNTPFKPCVSVYRCGGCNSBGLOCMNTSTSYLSK 183
DB 124 newrktqcmrprevcidvgkefgvatntffkppcvsvyrcggcnsbglocmntstsylsk 183
OY 184 TLFETITVPLSQGPKPVITISFANHSTCRGMSKLDVYRQVHSIIRSLPATLPQCOQANKTC 243
DB 184 tlfeitvplsogpkpvtisfanhtscrcmskldvyryqvhslirslpatlpgcgaanktc 243
OY 244 PTNYMNMNHICRCIAOEDPFMSSDAGDSTDFHIDICGPNKELDEETCCQVCRAGLRPAS 303
DB 244 ptnymnmnhicrciaqedfmsdagdstdfhldcgnkeldetccqvcvcraglrpas 303
OY 304 CGPHKELDRNSGCVCCKNKLFPSCGANREFDENTCCVCCKRTCPRNQPLNPGKACACCT 363
DB 304 cgphekeldrnscgcvccknkllfpgcganrefdentccgcckrtcpnrnplnpgkacacct 363
OY 364 ESPQCKLLGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCPVPSYW 413
DB 364 espqckllgkfkfhqtcscyrpctnrqkacepgfsyseecrcvpsyw 413

RESULT 9
AAB10648 standard; protein: 419 AA.

XX AAB10648;

DT 19-JAN-2001 (first entry)

XX Human VEGC protein.

KW VEGF-X; vascular endothelial growth factor: human; vulnerable; cytostatic;
KW antirheumatic; antiarthritic; antiproliferative; antidiabetic; treatment;
KW angiogenesis regulator; vascularization regulator; cancer; psoriasis;
KW rheumatoid arthritis; diabetic retinopathy; blood vessel; organ repair;

KM tissue regeneration; tissue repair; wound; dermal ulcer; pressure sore;
 KW venous sore; diabetic ulcer; burns; skin graft growth; VEGC.
 XX
 OS Homo sapiens.
 XX
 PN WO200037641-A2.
 XX
 PD 29-JUN-2000.
 XX
 PD 21-DEC-1999: 99WO-US30503.
 XX
 PF 22-DEC-1998: 98GB-0028377.
 PR 18-MAR-1999: 99US-0124967.
 PR 08-NOV-1999: 99US-0164131.
 XX
 PA (JANC) JANSSEN PHARM NV.
 XX
 PI Gordon RD, Sprengel JJ, Von JR, Dijkmans JH, Goslowska A;
 PI Dhanraj SN, Xu J;
 DR WPI: 2000-442669/38.
 XX
 PS Disclosure: Fig 11: 127pp: English.
 XX
 CC This invention describes a novel vascular endothelial growth factor-X
 CC (VEGF-X) protein (Ia) and its encoding polynucleotide (IIa) which has
 CC vulnerary, cytostatic, antirheumatic, antiarthritic, entiporiatic and
 CC antiadabetic activity and acts as an angiogenesis and vascularization
 CC regulator. An antisense molecule of the invention is useful for treating
 CC or preventing cancer, rheumatoid arthritis, psoriasis and diabetic
 CC rethopathy by inhibiting angiogenic activity or inappropriate
 CC vascularization including formation and proliferation of new blood
 CC vessels, growth and development of tissues, tissue regeneration and organ
 CC and tissue repair in a subject. The products of the invention are useful
 CC for preparing medicaments for treating wounds such as dermal ulcers,
 CC pressure sores, venous sores, diabetic ulcers and burns and to promote
 CC skin graft growth, tissue repair, proliferation of new blood vessels,
 CC tissue regeneration and organ repair by promoting angiogenic activity or
 CC vascularization. This sequence represents the human VEGC protein used
 CC to illustrate the method of the invention.
 CC
 XX
 XX Sequence 419 AA:
 SQ

Query Match 97.9%; Score 410; DB 21; Length 419;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 4 LGFFSVACSLAALALPGPREAPAAAAAFESGIDLSDAEPDAGEATAVASKDLEEQRLSV 63
 CC
 CC
 CC 4 lgffsvacslalaaallpgpreapaaaaafesgidlsdaepdageataysakdleeqrlsv 63
 DB
 OY 64 SSVDELMTVLYPEYWKMKYKQQLRKGQMHNRQANLNSRTEETIKFAAHYNTEILKSID 123
 CC
 CC
 CC 64 ssvdelmtvlypeywkmykqqlrkgyqwmhnrqanlnsrteetikfaahynnteilksid 123
 DB
 OY 124 NEWRKTCQMPREVCIDVGKEFGVATNTFFKPCVSVYRCGCCNSEGLCCMNSTSVLSK 163
 CC
 CC
 CC 124 newrktcqmprevcidvgkefgvatntffkpcvsvyrcgccnseglccmnstsvlsk 163
 DB
 OY 184 TLFEITVPLSQGPKPVYISFANHTSCRCMSKLDVYRQVHSIIIRSLPATLPQCOAANKTC 243
 CC
 CC
 CC 184 tlfeitvplsogpkrpvtisfanhtscrcmskldvyrqvhsiiirslpatlpqcoaanctc 243
 DB
 OY 244 PTYVMNNNHICRCLAOEDFESSDAGDSDGFDHICGPKKELDEETCCVCARGLRPAS 303
 CC
 CC
 CC 244 ptyvmnnnhicrclaoedfessdagdsdgfdhlcgpkkeldeetccvcarraglrpas 303
 DB
 OY 304 CGPHKELDRNSCOCVCKNKLFPSCGKANREFDENTCOCVCKRTCPRQGLNPGKCAECT 363
 CC
 CC
 CC 304 cghpkeldrnsococvcknklfpscoganrefdentcoccvckrtcprqglnpgkcaect 363
 DB

DB 304 cghpkeldrnsococvcknklfpscoganrefdentcoccvckrtcprqglnpgkcaect 363
 OY 364 ESPQKCLKGKRRFHHQTCSCYRRPCTNRQACFEGFSYSEVCHCVSYW 413
 CC
 CC
 CC 364 espqkcllkgkrrfhqtcscyrpctnrqacfegfsysevchcvsyw 413
 DB
 RESULT 10
 AAB29048
 ID AAB29048 standard; Protein: 419 AA.
 XX
 AC AAB29048;
 XX
 XX 31-JAN-2001 (first entry)
 DT
 DE Human VEGF-C protein sequence.
 XX
 KW Human: Flt4; fms-like tyrosine kinase 4; lymphoedema;
 KW vascular endothelial growth factor receptor 3; VEGFR-3;
 KW Milroy-Nonne syndrome; lymphoedema praecox; VEGF-C;
 KW vascular endothelial growth factor C.
 XX
 OS Homo sapiens.
 XX
 PN WO200058511-A1.
 PN
 PD 05-OCT-2000.
 XX
 PF 26-MAR-1999: 99WO-US06133.
 XX
 PR 26-MAR-1999: 99WO-US06133.
 XX
 PA (LUDW-) LUDWIG INST CANCER RES.
 PA (UYHE-) UNIV HELSINKI LICENSING LTD OY.
 PA (UYPT-) UNIV PITTSBURGH.
 XX
 XX Ferrell RE, Aitalo K, Flnegold DN, Karkkainen M;
 PI
 DR WPI: 2000-679298/66.
 DR
 DR N-PSDB; AAC62406.
 XX
 PT Screening a human subject for increased risk of developing a lymphatic
 PT disorder, comprises assaying a nucleic acid to determine a mutation
 PT altering the sequence of a vascular endothelial growth factor
 PT receptor-3 -
 XX
 PS Disclosure: Page 60-61; 76pp: English.
 PS
 CC The present sequence is the protein sequence for the human vascular
 CC endothelial growth factor C (VEGF-C). It was used to demonstrate the
 CC methods of the invention, which involve the screening of individuals to
 CC determine which vascular endothelial growth factor receptor 3 (VEGFR-3,
 CC also known as Flt4 or fms-like tyrosine kinase 4) alleles they possess
 CC and thus their likelihood of developing hereditary lymphoedema.
 CC Conditions associated with lymphoedema include Milroy-Nonne syndrome,
 CC which is early onset lymphoedema and lymphoedema praecox, which is late
 CC onset.
 CC
 XX
 XX Sequence 419 AA:
 SQ

Query Match 97.9%; Score 410; DB 21; Length 419;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 4 LGFFSVACSLAALALPGPREAPAAAAAFESGIDLSDAEPDAGEATAVASKDLEEQRLSV 63
 CC
 CC
 CC 4 lgffsvacslalaaallpgpreapaaaaafesgidlsdaepdageataysakdleeqrlsv 63
 DB
 OY 64 SSVDELMTVLYPEYWKMKYKQQLRKGQMHNRQANLNSRTEETIKFAAHYNTEILKSID 123
 CC
 CC
 CC 64 ssvdelmtvlypeywkmykqqlrkgyqwmhnrqanlnsrteetikfaahynnteilksid 123
 DB

QY 124 NEMRKTCMPREVCIDVGKEFGVATNTFFKPPCVSVYRGCGCNSGLQCMNTSTSLK 183
DB 124 newrkqcmprcvcldvkgfegvatntffkppcvsvyrgcgcnsglqcmntstslsk 183
QY 184 TLFETVPLSGQPKPYTISFANHTSCRCMSKLDYRQVHSIIRSLPATLPQQAANKTC 243
DB 184 tlfeitvplsgqpkpytisfanhtscrcmsklidyrvqhsilrrspatlpqqaanktc 243
QY 244 PTNYMNNHICRLAEDFMFSSDAGDSDTSGPHDICGNKELDEFTCCQVCVCRAGLRPAS 303
DB 244 ptnymnnhircrlaedfmfssdagdsdtsgphdicgnkeldeetcqvcvcraglrpas 303
QY 304 CGPHKELDNSQCVCYCKNKLFPSCGAGNRPEDNTCCQVCKRTPCPRNOLNPGKACCECT 363
DB 304 cgphekeldnscqvcycknklfpscganrefdentccqvcckrtcpnnglpngkaccec 363
QY 364 ESPQCKLKGKFFHHQTCSCYRRPCTNRKACPEPGFSYSEECVCPYSW 413
DB 364 espqckllgkffhnhqtcscyrtrpctnrqkacepgfsyseecrvpysw 413

RESULT 11

AAV70749
ID AAV70749 standard; Protein: 419 AA.
XX AAV70749;
AC AAV70749;
DT 17-AUG-2000 (first entry)
XX
DE Human prepro-vascular endothelial growth factor C.
XX
KM Human; receptor tyrosine kinase; RTK; Flt4; fms-like tyrosine kinase 4;
KM VEGFR-3; vascular endothelial growth factor receptor-3; chromosome 5q35;
KM cytosolic; tumour imaging; anti-tumour therapy; treatment; diagnosis;
KM neoplastic disease; lymphoma; carcinoma; breast; squamous cell; melanoma;
KM sarcoma; malignancy; VEGF-C; vascular endothelial growth factor C.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Peptide 1..31
FT Peptide /label= Signal_peptide
FT Peptide 32..103
FT /label= N-terminal_peptide
FT /note= "cleavage of this peptide from partially processed
FT VEGF-C produces a fully processed mature form of VEGF-C
FT of 21-23 kd which has high affinity to VEGFR-2"
FT 104..227
FT /label= Mature_VEGF-C
FT Peptide 228..419
FT /label= C-terminal_peptide
FT /note= "Has a pattern of spaced cysteine residues
FT reminiscent of a Balbiani ring 3 protein (BR3P) sequence;
FT cleavage of signal peptide and the C-terminal
FT peptide produces a partially processed form of VEGF-C of
FT about 29 kd which has high affinity to Flt4 (VEGFR-3)"
FT 113..213
FT /note= "binds and stimulates VEGF-C receptors; Cys
FT at position 156 is essential for VEGFR-2 binding and at
FT 157 is essential for VEGFR-2 and VEGFR-3 binding"
FT 131..211
FT /note= "important for VEGF-C activity"
FT Region
FT
PN WO200021560-A1.
PD 20-APR-2000.
XX
PE 08-OCT-1999; 99WO-US23525.
XX
PR 09-OCT-1998; 98US-0169079.
XX
PA (LUDW-) LUDWIG INST CANCER RES.

PA (UYHE-) UNIV HELSINKI LICENSING LTD OY.
XX
PI Alitalo K, Kaipainen A, Vainio R, Jussila L;
XX WPI: 2000-317850/27.
XX
PT Treating neoplastic diseases such as lymphoma, carcinomas, melanomas
PT and sarcomas, involves administering a compound capable of inhibiting
PT binding of ligand proteins to fms-like tyrosine kinase-4 receptor
XX
PS Example 15-17; Page 140-142; 148pp; English.
XX
CC The patent discloses a method to treat neoplastic disease characterised
CC by expression of fms-like tyrosine kinase 4 (Flt4) receptor (also
CC referred as vascular endothelial growth factor receptor-3, VEGFR-3) in
CC endothelial cells of blood vessels adjacent to malignant neoplasm. The
CC method involves administering a compound that inhibits binding of a
CC ligand to Flt4 thereby inhibiting Flt4 mediated proliferation of vascular
CC endothelial cells. The compound is useful for treating neoplastic disease
CC such as breast carcinomas, squamous cell carcinomas, lymphomas, melanomas
CC and sarcomas. Flt4 receptor tyrosine kinase binding compounds can be used
CC for manufacturing medicament useful for diagnostic screening, imaging and
CC treatment of malignancies characterised by Flt4-expressing blood cells.
CC The Flt4 gene maps to chromosomal region 5q35 and is expressed as 5.8 kb
CC and 4.5 kb mRNAs which differ in their 3' sequences and are
CC differentially expressed in HEL and DAMI cell lines. Flt4
CC belongs to a subfamily of class III receptor tyrosine kinases (RTKs).
CC It is used as a target for tumour imaging and anti-tumour therapy.
CC The present sequence is a human prepro-vascular endothelial growth
CC factor C (VEGF-C), a specific example of Flt4 binding compound.
XX
SQ Sequence 419 AA:

Query Match 97.9%; Score 410; DB 21; Length 419;
Best local Similarity 100.0%; Pred. No. 0;
Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 4 LCFPSVACSLAAALPGREAPAAAFESGLDLDAPDAGEATYASKDLEQLRSV 63
DB 4 lcfpsvacslaaalpgreapaaafesglldlapdageatayaskdleeqllrsv 63
QY 64 SSVDELMTVLYPEYWKYKQQLRKGQHNREQANINSTRTEETIKFAAHYNTETLSKD 123
DB 64 ssvdelmtvlypeywkymkqqlrkqgqhnreqaaninstrteetikaahyntetlksid 123
QY 124 NEMRKTCMPREVCIDVGKEFGVATNTFFKPPCVSVYRGCGCNSGLQCMNTSTSLK 183
DB 124 newrkqcmprcvcldvkgfegvatntffkppcvsvyrgcgcnsglqcmntstslsk 183
QY 184 TLFETVPLSGQPKPYTISFANHTSCRCMSKLDYRQVHSIIRSLPATLPQQAANKTC 243
DB 184 tlfeitvplsgqpkpytisfanhtscrcmsklidyrvqhsilrrspatlpqqaanktc 243
QY 244 PTNYMNNHICRLAEDFMFSSDAGDSDTSGPHDICGNKELDEFTCCQVCVCRAGLRPAS 303
DB 244 ptnymnnhircrlaedfmfssdagdsdtsgphdicgnkeldeetcqvcvcraglrpas 303
QY 304 CGPHKELDNSQCVCYCKNKLFPSCGAGNRPEDNTCCQVCKRTPCPRNOLNPGKACCECT 363
DB 304 cgphekeldnscqvcycknklfpscganrefdentccqvcckrtcpnnglpngkaccec 363
QY 364 ESPQCKLKGKFFHHQTCSCYRRPCTNRKACPEPGFSYSEECVCPYSW 413
DB 364 espqckllgkffhnhqtcscyrtrpctnrqkacepgfsyseecrvpysw 413

RESULT 12

AAV70982
ID AAV70982 standard; Protein: 419 AA.
XX
AC AAV70982;
XX

DT 09-AUG-2000 (first entry)
XX Human vascular endothelial growth factor (VEGF)-C protein.
DE
XX Vascular endothelial growth factor-C; VEGF: human; re-endothelialisation;
KM vascular endothelial growth factor receptor; VEGFR; vascular trauma;
KM blood vessel; cardiovascular surgery; anti-restenosis agent; prevention;
KM restenosis; stenosis; percutaneous transluminal coronary angioplasty.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Peptide 1..31 /label= Signal_peptide
FT /note= "Cleavage results in partially-processed VEGF-C
FT protein (29 kD)"
FT 32..103
FT Peptide /label= Amino terminal peptide
FT /note= "Cleavage results in fully-processed mature
FT VEGF-C protein (21-23 kD)"
FT 104..227
FT Protein /label= Mature_human_VEGF_C
FT /note= "Processed vascular epithelial growth factor-C"
FT 83
FT Binding-site /note= "Essential for VEGFR-2 and VEGFR-3 binding"
FT 131..211
FT Binding-site /note= "Essential for biological activity of protein"
FT 137
FT Binding-site /note= "Essential for VEGFR-2 and VEGFR-3 binding"
FT 156
FT Binding-site /note= "Essential for VEGFR-2 binding"
FT 165
FT Binding-site /note= "Essential for VEGFR-2 and VEGFR-3 binding"
FT 228..419
FT Peptide /label= Carboxy-terminal peptide
FT /note= "Cleavage results in partially-processed VEGF-C
FT protein (29 kD)"
XX
XX MO200024412-A2.
XX
XX 04-MAY-2000.
XX
XX 26-OCT-1999; 99MO-US24054.
XX
XX 26-OCT-1998; 98US-0105587.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
XX (UYHE-) UNIV HELSINKI LICENSING LTD OY.
XX (YLAH/) YLA-HERTUULA S.
XX
XX Yla-heretuula S, Alltalo K, Hiltunen MO, Jeltsch MM, Achen MG;
XX
XX MPI; 2000-350584/30.
XX DR N-PSDB; AAD00339, AAD00353.
XX
XX Preventing stenosis and restenosis in mammals using vascular
XX endothelial growth factor proteins or the nucleic acids encoding them -
XX
XX Claim 5; Page 51-53; 61pp; English.
XX
XX The present amino acid sequence is the complete human prepro-vascular
XX endothelial growth factor (VEGF)-C. VEGF-C has the ability to stimulate
XX re-endothelialisation of an injured blood vessel, without significant
XX stimulation of smooth muscle cell proliferation. It can bind to and
XX stimulate VEGFR-2 (vascular endothelial growth factor receptor) and/or
XX VEGFR-3 phosphorylation in cells that express such receptors. An
XX anti-restenosis agent comprising either a VEGF-C gene or protein is
XX used in a method to reduce or prevent restenosis and stenosis of a blood
XX vessel following vascular trauma e.g., cardiovascular surgery and
XX percutaneous transluminal coronary angioplasty.
XX
XX Sequence 419 AA;

Query Match 97.9%; Score 410; DB 21; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 4 LGFSSVACSLAALLGPRAPAAAAAFESGLDLSDAEPAGATATVASKDLEQLRSV 63
DB 4 LGfsvacsllaaallpgrreapaaaaafesglidsdaepagatatvaskdleqlrsv 63
QY 64 SSVDELMTVLYPEYKKWYKCOLRKGMQHNREOANLRSFETIKFPAAHYTEILKSID 123
DB 64 ssvdelmtvlypeykmkqllrk9wqhmegenlnsteeclikfaahyntelksid 123
QY 124 NEMRKTCMPREVCIDVKEFGVATNTEFPKPCSVYRCGCCNSEGLQCNMTSTYLSK 183
DB 124 newrktcmprevcidvkefgvatntefpkpcsvyrcgccnseglqcmntstyslsk 183
QY 184 TLFETITPLSGRPVITISFANHTSCRCMSKLDVYRQVHSITRSLPATLPQCAANKTC 243
DB 184 tlfetitplsgrpvitisfanhtscrcmskldivryqvslltrslpatlpqcaanktc 243
QY 244 PTNYMMNNHICRCLAQEDFMFSSDAGDSTDFHIDICGPNKELDEETCCVCRRAGLRPAS 303
DB 244 ptnymnnhicrcclaqedfmfssdagdstdfhidgepnkeldeetccvcrraglrpas 303
QY 304 CGPHKELDRNSCOCVCNKKLFPSOCGANREFDEMTCCVCCKRTCPRNOPLNPGACACT 363
DB 304 cgphekeldrnsocvcnkklfpsocganrefdentccvcckrtcprnplnpgacact 363
QY 364 ESPQCKLLKGGKHHQRCRRPCTNRKACGEFSYSEVCVCVSYW 413
DB 364 espqckllkgkhhqrcrrpctnrkacgefsysevcvcvsw 413
RESULT 13
AAB37605
ID AAB37605 standard; Protein: 419 AA.
XX
XX AAB37605;
XX
XX 27-FEB-2001 (first entry)
XX
XX Human VEGF-C.
XX
XX Human; gene therapy; lymphatic disorder; hereditary lymphoedema; FL4;
XX KM vascular endothelial growth factor receptor-3; VEGFR-3; VEGF-C; VEGF-D;
XX KM fms-like tyrosine kinase 4.
XX
XX Homo sapiens.
XX
XX CA2283470-A1.
XX PN
XX 26-SEP-2000.
XX PD
XX 26-SEP-1999; 99CA-2283470.
XX PF
XX 26-MAR-1999; 99MO-US06133.
XX PR 16-AUG-1999; 99US-0375248.
XX
XX (UYPI-) UNIV PITTSBURGH.
XX PA (UYHE-) UNIV HELSINKI LICENSING LTD OY.
XX PA (LUDW-) LUDWIG INST CANCER RES.
XX
XX Alltalo K, Ferrell RE, Finegold DN, Karhkalainen M;
XX
XX MPI; 2001-007762/02.
XX DR N-PSDB; AAC68953.
XX
XX Screening a human for an increased risk of developing lymphatic
XX disorder comprises assaying nucleic acid for alterations in the
XX PT sequences expressing vascular endothelial growth factor receptor-3 -
XX
XX Disclosure; Pages 62-63; 99pp; English.

XX The present invention relates to a method for screening a human subject
CC for an increased risk of developing a lymphatic disorder e.g. hereditary
CC lymphoedema. The method comprises assaying nucleic acid of a human
CC subject to determine a presence or an absence of a mutation altering the
CC sequence or expression of vascular endothelial growth factor receptor-3
CC (VEGFR-3)/fms-like tyrosine kinase 4 (Flt4) allele (see AAC68952 and
CC AA837604) and determining an increased risk of developing lymphatic
CC disorder from presence or absence of the mutation. The presence of a
CC mutation altering the encoded amino acid sequence or expression of at
CC least 1 VEGFR-3 allele in the nucleic acid correlates with an increased
CC risk of developing a lymphatic disorder. Treatment for hereditary
CC lymphoedema can be provided through the administration of vascular
CC endothelial growth factor C (VEGF-C) and vascular endothelial growth
CC factor D VEGF-D genes (via gene therapy) and proteins. The present
CC sequence is the protein sequence for VEGF-C.
XX
SQ Sequence 419 AA:

Query Match 97.9%; Score 410; DB 22; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 4 IGFSSVACSLAALLPGPREAPAAAAAFESGLDSDAEPDAGEATAYASKDLEQLRSV 63
DB 4 IGFSSVACSLAALLPGPREAPAAAAAFESGLDSDAEPDAGEATAYASKDLEQLRSV 63
OY 64 SSVDLMTLVLYPEYWKMYCOLRKSGMOHNRQANLNSTEETIKFAAHYNTIELIKSID 123
DB 64 SSVDLMTLVLYPEYWKMYCOLRKSGMOHNRQANLNSTEETIKFAAHYNTIELIKSID 123
OY 124 NEMRKTQCMPREVICIDVGEKEFGVATNTFFKPCVSVYRCGGCCNSEGLQCMNTSTYLSK 183
DB 124 NEMRKTQCMPREVICIDVGEKEFGVATNTFFKPCVSVYRCGGCCNSEGLQCMNTSTYLSK 183
OY 124 NEWRTQCMPREVICIDVGEKEFGVATNTFFKPCVSVYRCGGCCNSEGLQCMNTSTYLSK 183
DB 124 NEWRTQCMPREVICIDVGEKEFGVATNTFFKPCVSVYRCGGCCNSEGLQCMNTSTYLSK 183
OY 184 TTFETTVPLSGRPKYTTSFANHTSGRCMSKIDYRQVHSITRRSLPATLPQQAANKTC 243
DB 184 TTFETTVPLSGRPKYTTSFANHTSGRCMSKIDYRQVHSITRRSLPATLPQQAANKTC 243
OY 244 PTNYMMNNHICICLAODEFMFSSDAGDDSTDFHDCGNPKELDEETCCQVCRAGLRPS 303
DB 244 PTNYMMNNHICICLAODEFMFSSDAGDDSTDFHDCGNPKELDEETCCQVCRAGLRPS 303
OY 304 CGPHKELDRNSQCVCYCKNKLFPSCGAGNREFDENTCQVCCKRTCPRNQPLNPGKCAECCT 363
DB 304 CGPHKELDRNSQCVCYCKNKLFPSCGAGNREFDENTCQVCCKRTCPRNQPLNPGKCAECCT 363
OY 364 ESPQCLLKGKFFHHQTGSCYRRPCTNRQKACPEPFSYSEEVCRVPSY 413
DB 364 ESPQCLLKGKFFHHQTGSCYRRPCTNRQKACPEPFSYSEEVCRVPSY 413

RESULT 14
AAW86237
ID AAW86237 standard; protein: 399 AA.
XX
XX AAW86237;
XX
XX 16-FEB-1999 (first entry)
XX
XX Human VEGF-C full length sequence.
XX
XX VEGF: VRF; vascular endothelial growth factor; VEGF-related protein;
XX recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia;
XX coronary; collateral vessel development; cell growth; migration; heart;
XX lower limb ischaemia; stroke; peripheral vascular disease; intestine;
XX wound healing; skin; vascular permeability.
XX
XX Homo sapiens.
XX
XX MO9849300-A2.
XX
XX

PD 05-NOV-1998.
XX
XX 20-APR-1998; 98WO-US07801.
XX
XX 25-APR-1997; 97US-0842984.
XX
XX (COLL-) COLLATERAL THERAPEUTICS.
XX
XX Bohlen P;
XX
XX WPI: 1999-009426/01.
XX
XX
XX The invention relates to truncated VRF (vascular endothelial growth
XX factor (VEGF)-related protein) subunits that have at least one amino
XX acid N-terminal to the first Cys of the core sequence deleted. Host
XX cells transformed or transfected with expression vectors containing
XX nucleic acids encoding the truncated VRF subunits are used to produce
XX the truncated proteins recombinantly. The truncated VRF subunits,
XX optionally expressed from gene therapy vectors, have in vivo and in vitro
XX angiogenic activity and are used to stimulate angiogenesis, particularly
XX coronary collateral vessel development in cases of cardiac ischaemia; to
XX stimulate endothelial cell growth and migration in vitro; to treat heart
XX disease; to treat ischaemia (e.g. cardiac, chronic coronary or chronic
XX lower limb ischaemia, stroke and peripheral vascular disease); to promote
XX healing of wounds (of skin or intestines), and to increase vascular
XX permeability. Sequences AAW86234 to AAW86239 represent full length VRF
XX sequences from which the truncated fragments are created.
XX
SQ Sequence 399 AA:

Query Match 93.8%; Score 393; DB 20; Length 399;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 393; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 21 GPREAFAAAAAFESGLDSDAEPDAGEATAYASKDLEQLRSVSSVDLMTLVLYPEYWK 80
DB 1 GPREAFAAAAAFESGLDSDAEPDAGEATAYASKDLEQLRSVSSVDLMTLVLYPEYWK 80
OY 81 YKCOLRKSGMOHNRQANLNSRTEETIKFAAHYNTIELIKSIDNEMRKTQCMPREVICIDY 140
DB 61 YKCOLRKSGMOHNRQANLNSRTEETIKFAAHYNTIELIKSIDNEMRKTQCMPREVICIDY 140
OY 141 GKEFGVATNTFFKPCVSVYRCGGCCNSEGLQCMNTSTYLSKTLEITVPLSGRPKY 200
DB 121 GKEFGVATNTFFKPCVSVYRCGGCCNSEGLQCMNTSTYLSKTLEITVPLSGRPKY 200
OY 201 ISFANHTSGRCMSKIDYRQVHSITRRSLPATLPQQAANKTCPTNYMMNNHICICLAOE 260
DB 181 ISFANHTSGRCMSKIDYRQVHSITRRSLPATLPQQAANKTCPTNYMMNNHICICLAOE 260
OY 261 DFMFSSDAGDDSTDFHDCGNPKELDEETCCQVCRAGLRPSGPHKELDRNSQCVCYCK 320
DB 241 DFMFSSDAGDDSTDFHDCGNPKELDEETCCQVCRAGLRPSGPHKELDRNSQCVCYCK 320
OY 321 NKLFPSCGAGNREFDENTCQVCCKRTCPRNQPLNPGKCAECCTESPQCLLKGKFFHHQT 380
DB 301 NKLFPSCGAGNREFDENTCQVCCKRTCPRNQPLNPGKCAECCTESPQCLLKGKFFHHQT 380
OY 381 GSCYRRPCTNRQKACPEPFSYSEEVCRVPSY 413
DB 361 GSCYRRPCTNRQKACPEPFSYSEEVCRVPSY 413

RESULT 15
AAW30519
ID AAW30519 standard; protein: 350 AA.
XX
XX

```

XX
AC AAY30519;
XX
DT 16-NOV-1999 (first entry)
XX
DE A truncated vascular endothelial growth factor-2.
XX
KM Human vascular endothelial growth factor-2; VEGF-2;
KM vascular endothelial cell growth; endothelial cell migration;
KM angiogenesis; blood pressure; blood flow; immune system disorder;
KM immune cell; cancer; autoimmune disorder; blood protein disorder;
KM ataxia telangiectasia; common variable immunodeficiency;
KM DiGeorge syndrome; HIV infection; HTLV-BLV infection;
KM leukocyte adhesion deficiency syndrome; lymphopenia;
KM phagocyte bactericidal dysfunction; severe combined immunodeficiency;
KM Wiskott-Aldrich disorder; anemia; thrombocytopenia; hemoglobinuria;
KM allergy; asthma; allergic asthma.
XX
OS Homo sapiens.
XX
PN MO946364-A1.
XX
PD 16-SEP-1999.
XX
PF 10-MAR-1999; 99MO-0505021.
XX
PR 13-MAR-1998; 98US-0042105.
PR 30-JUN-1998; 98US-0107997.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
PI Rosen CA, Cao L, Hu J;
DR MPI: 1999-551399/46.
DR N-PSDB; AA210524.
XX
PT New human vascular endothelial growth factor-2, used for treating, e.g.
PT immune disorders and cancers -
XX
PS Example 2; Fig 2A-D; 222pp; English.
XX
CC The present sequence represents a truncated, biologically active form
CC of human vascular endothelial growth factor-2 (VEGF-2). The VEGF-2
CC polypeptides have activities similar to VEGF. The VEGF-2 polypeptides
CC stimulate the growth of vascular endothelial cells, stimulate endothelial
CC cell migration, stimulate angiogenesis, decrease blood pressure, and
CC increase blood flow. The polynucleotides and polypeptides can be used
CC for preventing, treating or ameliorating a medical condition. The
CC VEGF-2 polypeptides or polynucleotides may be useful in treating
CC deficiencies or disorders of the immune system, by activating or
CC inhibiting the proliferation, differentiation, or mobilization
CC (chemotaxis) of immune cells. The etiology of these immune deficiencies
CC or disorders may be genetic, somatic, such as cancer or some autoimmune
CC disorders, acquired (e.g. by chemotherapy or toxins), or infectious.
CC Examples of immunologic deficiency syndromes include blood protein
CC disorders, ataxia telangiectasia, common variable immunodeficiency,
CC DiGeorge syndrome, HIV infection, HTLV-BLV infection, leukocyte adhesion
CC deficiency syndrome, lymphopenia, phagocyte bactericidal dysfunction,
CC severe combined immunodeficiency (SCIDS), Wiskott-Aldrich disorder,
CC anemia, thrombocytopenia, or hemoglobinuria. They can also be used to
CC modulate emostatic or thrombolytic activity. Similarly allergic reactions
CC and conditions such as asthma (particularly allergic asthma) or other
CC respiratory problems, may also be treated.
XX
SO Sequence 350 AA;

```

```

Db 1 mtvlypeywmkmycqqlrkqgqhnrqeganiinstrteelikfaahyntellksidnewrkc 60
QY 130 OCMFREVCIDVGKKEFGVATNTFFKPPCVSVYRCGGCCNSGLQCMNTSYLSKTLFEIT 189
Db 61 qcmprvclvgkelfgvalntllfkpcvsvyrcggccnsqllqmntstsylskltlfeit 120
QY 190 VPLSQGPKPVYISFANHTSCRCMSKLDVYRQVHSIIIRSLPATLPQCAANKTCPTNYMW 249
Db 121 vplsqgpkpvtisfantlscrcmskldvyrgvhsilrrslpatlpgqqaanktcptnymw 180
QY 250 NNHICRCLAQEDFESSDAGDDSTDGFHDICGPNKELDEETCCQVCRAGLRPASGPHKE 309
Db 181 nhhircrlaqedlfmfsdagddslcldgfhdicgpnkeldetccqvcraglrpasgphke 240
QY 310 LDRNSCCVCNKNLFPSCGANREFDENTCCQCKRTPCPNPNPLNPGKACECTESPQXC 369
Db 241 ldrnscgcvcnknlfpscganrefdentccqckrtcpnpglnpgkacectespqxc 300
QY 370 LNRGKKFHHOTCSCYRRPCTNRQKACBPFGFSSEWCRVPSYWRPQMS 419
Db 301 lnrqkkfhhqtlscscyrtrpctnrqkacepgfsysewcrvpsywrpqms 350

```

Search completed: November 15, 2001, 10:07:12
Job time: 44 sec

```

Query Match      83.5%; Score 350; DB 20; Length 350;
Best local Similarity 100.0%; Pred. No. 0;
Matches 350; Conservative 0; Mismatches 0; Index 0; Gaps 0;
OY 70 MFLVLPBYWKMVYCOLRKGGWQHNRQEGANINSTRTEELIKFAAHYNTELLKSIDNEWRKPT 129
|||||

```

GenCore version 4.5
Copyright (c) 1993 - 2000 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: November 15, 2001, 10:06:28 ; Search time 25.79 Seconds

(without alignments)
1237.578 Million cell updates/sec

Title: US-09-257-272-2

Perfect score: 419
Sequence: 1 MHSIGFSSVACSLLAALLP.....SYSEVGRVPSYWRPQMS 419

Scoring table:
Gapop 60.0 , Gapext 60.0

Searched: 219241 seqs, 76174552 residues

Word size : 30

Total number of hits satisfying chosen parameters: 1

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :

1: PIR:68: *
2: PIR1: *
3: PIR2: *
4: PIR3: *
5: PIR4: *

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description	
1	410	97.9	419	2	569207	vascular endothelial

ALIGNMENTS

RESULT 1
569207
vascular endothelial growth factor C precursor - human
N:Alternate names: Flt4 ligand DHM
C:Species: Homo sapiens (man)
C:Date: 27-Apr-1996 #sequence, revision 01-Nov-1996 #text, change 08-Oct-1999
C:Accession: S69207; S61795; S71443; S69208; G02659
R:Joukov, V.; Pajusola, K.; Kaipainen, A.; Chillov, D.; Lahtinen, I.; Kukk, E.; Saksela, EMBO J. 15, 1751, 1996
A:Title: Corrigendum: A novel vascular endothelial growth factor, VEGF-C, is a ligand for A:Reference number: S69207; MUID:96203094
A:Accession: S69207
A:Status: nucleic acid sequence not shown
A:Molecule type: mRNA
A:Residues: 1-419 <JOU>
A:Cross-references: EMBL:X94216; NID:g11177488; PTDN:CAA63907.1; PID:e221096; PID:g118200
A:Note: the nucleotide sequence was submitted to the EMBL Data Library, December 1995
A:Note: only a part of the translation is shown
A:Note: this is a revision to the sequence from reference S61795
R:Joukov, V.; Pajusola, K.; Kaipainen, A.; Chillov, D.; Lahtinen, I.; Kukk, E.; Saksela, EMBO J. 15, 290-298, 1996
A:Title: A novel vascular endothelial growth factor, VEGF-C, is a ligand for the Flt4 (V A:Reference number: S61795; MUID:96178224

A:Accession: S61795
A:Status: nucleic acid sequence not shown; not compared with conceptual translation
A:Molecule type: mRNA
A:Residues: 70-419 <JOU>
A:Note: this sequence has been revised in reference S69207
A:Accession: S71443
A:Molecule type: protein
A:Residues: 'X', 104-120 <JOU>
R:Lee, J.; Gray, A.; Yuan, J.; Luo, S.M.; Avraham, H.; Wood, W.I.
submitted to the EMBL Data Library, December 1995
A:Description: Vascular endothelial growth factor related protein (VRP): A ligand and A:Reference number: S69208
A:Accession: S69208
A:Molecule type: mRNA
A:Residues: 1-419 <LEE>
A:Cross-references: EMBL:U43142; NID:g1150988; PTDN:AA65214.1; PID:g1150989
R:Morris, J.C.
submitted to the EMBL Data Library, May 1996
A:Reference number: H01557
A:Accession: G02659
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-419 <MOR>
A:Cross-references: EMBL:U58111; NID:g1373426; PTDN:AA802909.1; PID:g1373427
C:Genetics:
A:Gene: GDB:VEGFC; VRP
A:Cross-references: GDB:3890883; OMIM:601528
F:1-12/Domain: signal sequence #status predicted <SIG>
F:13-102/Domain: propeptide #status predicted <PRO>
F:103-419/Product: vascular endothelial growth factor C #status experimental <MAT>

Query Match 97.9%; Score 410; DB 2; Length 419;
Best local similarity 100.0%; Pred. No. 0;
Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 4 LGFFSVACSLLAALLPGPREAPAAAAAFESGLDLSDEPDAGEAPAYASKDLEOLRSV 63
DB 4 LGFFSVACSLLAALLPGPREAPAAAAAFESGLDLSDEPDAGEAPAYASKDLEOLRSV 63
QY 64 SSVDLMTVLYPEYKWKYKCOLRRKGQHRBOANLSREFTIKPAAHYNTETIKSID 123
DB 64 SSVDLMTVLYPEYKWKYKCOLRRKGQHRBOANLSREFTIKPAAHYNTETIKSID 123
QY 124 NEMRKTQCMREVCIDYGEFEGVATNTFFKPCVSVYRCGGCCNSGLQCMNTSTYLSK 183
DB 124 NEMRKTQCMREVCIDYGEFEGVATNTFFKPCVSVYRCGGCCNSGLQCMNTSTYLSK 183
QY 184 TLEFETVPLSOGPKPVITISFANHTSCRCMSKLDVYRQVHSIIRSLPATLPQCAANKTC 243
DB 184 TLEFETVPLSOGPKPVITISFANHTSCRCMSKLDVYRQVHSIIRSLPATLPQCAANKTC 243
QY 244 PTNYMMNNHICRCLADEDFESSDAGDSDTDFHICGPKKELDEFTCCQVCRAGLRPAS 303
DB 244 PTNYMMNNHICRCLADEDFESSDAGDSDTDFHICGPKKELDEFTCCQVCRAGLRPAS 303
QY 304 CGPHKEIDRRNSCCQVCCKNKLFPSCGACANREFDENTOCVCRTCPNPQPLNPKCACECT 363
DB 304 CGPHKEIDRRNSCCQVCCKNKLFPSCGACANREFDENTOCVCRTCPNPQPLNPKCACECT 363
QY 364 ESPQKCLLGGKRFHDTSCYRRPCTNRQACBPFGSYSEVGRVPSYW 413
DB 364 ESPQKCLLGGKRFHDTSCYRRPCTNRQACBPFGSYSEVGRVPSYW 413

Search completed: November 15, 2001, 10:07:43
Job time: 75 sec

GenCore version 4.5
Copyright (c) 1993 - 2000 Compen Ltd.

OM protein - protein search, using sw model

Run on: November 15, 2001, 10:06:28 ; Search time 16.77 Seconds
(without alignments)
855.876 Million cell updates/sec

Title: US-09-257-272-2

Perfect score: 419

Sequence: 1 MHSIGFVSACSLLAALLP.....SYSEVGRVCPVWQRPQMS 419

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 93435 seqs, 34255486 residues

Word size : 30

Total number of hits satisfying chosen parameters: 2

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database : SWISSPROT_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	410	97.9	419	1	VEGC_HUMAN
2	68	16.2	415	1	VEGC_MOUSE

ALIGNMENTS

RESULT 1
ID VEGC_HUMAN STANDARD: PRT: 419 AA.
AC P49767;
DT 01-OCT-1996 (rel. 34, Created)
DT 01-OCT-1996 (rel. 34, Last sequence update)
DT 01-OCT-2000 (rel. 40, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (VASCULAR
DE ENDOTHELIAL GROWTH FACTOR RELATED PROTEIN) (VRP) (FLT4 LIGAND) (FLT4-
L).
GN VEGF-C.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP MEDLINE=96178224; PubMed=8617204;
RA Joukov V., Pajusola K., Kaipainen A., Chillov D., Lahtinen I., Kukk E.,
RA Saksela O., Kalkkinen N., Allitalo K.;
RT "A novel vascular endothelial growth factor, VEGF-C, is a ligand for
the Flt4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases.";
RL EMBO J. 15:290-298(1996).
RN [2]
RP ERRATUM.
RX MEDLINE=96203094; PubMed=8612600;

RA Joukov V., Pajusola K., Kaipainen A., Chillov D., Lahtinen I., Kukk E.,
RA Saksela O., Kalkkinen N., Allitalo K.;
RL EMBO J. 15:1751-1751(1996).
RN [3]
RP SEQUENCE FROM N.A.
RX MEDLINE=96312526; PubMed=8700872;
RA Lee J., Gray A., Yuan J., Luo S.-M., Avraham H., Wood W.T.;
RT "Vascular endothelial growth factor-related protein: a ligand and
specific activator of the tyrosine kinase receptor Flt4.";
RL Proc. Natl. Acad. Sci. U.S.A. 93:1988-1992(1996).
RN [4]
RP SEQUENCE FROM N.A.
RA Filiz L., Morris J.C., Towler P.S., Long A.J., Greco R.,
RA Burgess P., Giannotti J., Claretta A., Hennessey D., Kovacic S.,
RA Fitzgerald M., Scaltreto H., Welch N., Neben S., Flinerty H.,
RA Zollner R., Wang J., Nickbarg E., Gassaway R., Turner K.,
RA Wood C.R.;
RL Submitted (JUN-1996) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC CELL GROWTH.
CC -1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.
CC -1- PTM: PROBABLY PROTEOLITICALLY PROCESSED IN THE C-TERMINUS.
CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement. (See <http://www.isb-sib.ch/announce/>
CC or send an email to license@isb-sib.ch).
CC
CC EMBL: X94216; CAA63907.1; -
CC EMBL: U43142; AAB85214.1; -
CC EMBL: U58111; AAB02909.1; -
CC HSSP: P15692; 1VPF.
CC MIM: 601528; -
DR InterPro: IPR000072; -
DR InterPro: IPR002400; -
DR Pfam: PF00341; PDGF_1.
DR PRINTS: PR00438; GFCYSKNOT.
DR PROSITE: PS00249; PDGF_1; 1.
DR PROSITE: PS0278; PDGF_2; 1.
KW Mitogen; Growth factor; Glycoprotein; Signal; Repeat.
FT SIGNAL 1 ?
FT PROPEP 102
FT CHAIN 103 419
FT DOMAIN 275 365
FT REPEAT 275 298
FT REPEAT 299 322
FT REPEAT 323 346
FT REPEAT 347 365
FT CARBOHYD 175 175
FT CARBOHYD 205 205
FT CARBOHYD 240 240
SQ SEQUENCE 419 AA: 46883 MW: 9F598719DB3E014F CRC64;

Query Match 97.9%; Score 410; DB 1; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 4 LGFFSVACSLLAALLPGPREAPAAAAAFSSGDLSDAEPDAGEATVASKDLEQRLSV 63
DB 4 LGFFSVACSLLAALLPGPREAPAAAAAFSSGDLSDAEPDAGEATVASKDLEQRLSV 63

OY 64 SSYDELMTVLYPEYKMKYKCOLKRGQOHNRQOANLSRTETIKFAAAHYNTIELKSID 123
DB 64 SSYDELMTVLYPEYKMKYKCOLKRGQOHNRQOANLSRTETIKFAAAHYNTIELKSID 123

OY 124 NEWKTKQCMPREVCIDVGKFGVATNTFFKPCVSVYRCGGCCNSGLQCMNTSTYLSK 183
DB 124 NEWKTKQCMPREVCIDVGKFGVATNTFFKPCVSVYRCGGCCNSGLQCMNTSTYLSK 183

OY 184 TLFETVPLSOGPKPVTTISFANHSCRCMSKLDVYRQVHSITRRSLPATLPQCOAANKTC 243
 DB 184 TLFETVPLSOGPKPVTTISFANHSCRCMSKLDVYRQVHSITRRSLPATLPQCOAANKTC 243
 OY 244 PTNYMMNNHICGLAOEPMFSSDAGDDSTDSGFHDICGNKRLDEFTQCQVCRAGIRPAS 303
 DB 244 PTNYMMNNHICGLAOEPMFSSDAGDDSTDSGFHDICGNKRLDEFTQCQVCRAGIRPAS 303
 OY 304 CGPHKELDRNSOCVCYCKNKLFPSCGANNREPDENTCQCCKRTPCRNOPLNPGKACCECT 363
 DB 304 CGPHKELDRNSOCVCYCKNKLFPSCGANNREPDENTCQCCKRTPCRNOPLNPGKACCECT 363
 OY 364 ESPQCLLKGGKFFHHQTSCTVRRPCTNRKACEPGRSYSEVCRVPSYW 413
 DB 364 ESPQCLLKGGKFFHHQTSCTVRRPCTNRKACEPGRSYSEVCRVPSYW 413

RESULT 2
 VEGC_MOUSE STANDARD: PRT: 415 AA.
 AC P97953;
 DT 15-JUL-1998 (Rel. 36, Created)
 DT 15-JUL-1998 (Rel. 36, Last sequence update)
 DT 30-MAY-2000 (Rel. 39, Last annotation update)
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (FLT4 LIGAND) (FLT4-L).
 GN VEGFC.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
 CC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=BALB/C;
 RX MEDLINE=97164697; PubMed=9012504;
 RA Kukk E., Lymbousaki A., Taira S., Kaipainen A., Jeltsch M.,
 RT Joukov V., Alitalo K.;
 RT "VEGF-C receptor binding and pattern of expression with VEGFR-3
 suggests a role in lymphatic vascular development.";
 RL development 122:3829-3837(1996).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC STRAIN=BAIB/C;
 RX MEDLINE=97388482; PubMed=9247316;
 RA Flitz L.J., Morris J.C., Towler P., Long A., Burgess P., Greco R.,
 RA Wang J., Gassaway R., Nickbarg E., Kovacic S., Claretta A.,
 RA Giannotti J., Flinerty H., Zollner R., Belier D.R., Leak L.V.,
 RA Turner K.J., Wood C.R.;
 RT "Characterization of murine Flt4 ligand/VEGF-C";
 RL Oncogene 15:613-618(1997).
 CC -1- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
 CC CELL GROWTH.
 CC -1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED (BY SIMILARITY).
 CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 CC or send an email to license@isb-sib.ch).
 CC
 DR EMBL: U73620; AAC52984.1; -;
 DR EMBL: U58112; AAB46707.1; -;
 DR HSP: P15692; IVPF.
 DR MGD: MGI:105124; Vegfc.
 DR InterPro: IPR000072; -;
 DR InterPro: IPR002400; -;
 DR Pfam: PF00341; PDGF.1.
 DR PRINTS: PRO0438; GRCYSKNOT.
 DR PROSITE: PS00249; PDGF_1; 1.

DR PROSITE: PS50278; PDGF_2; 1.
 KM Mitogen; Growth factor; Glycoprotein; Signal; Repeat.
 FT SIGNAL 1 ?
 FT PROPEP 99 415
 FT CHAIN 271 361
 FT DOMAIN 271 361
 FT REPEAT 271 361
 FT REPEAT 295 318
 FT REPEAT 319 342
 FT REPEAT 343 361
 FT CARBOHYD 171 171
 FT CARBOHYD 201 201
 FT CARBOHYD 236 236
 SQ SEQUENCE 415 AA; 46471 MW; D9D3DD3CECC659D6 CRC64;

Query Match 16.2%; Score 68; DB 1; Length 415;
 Best Local Similarity 100.0%; Pred. No. 2.1e-59;
 Matches 68; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 180 YLSKTLFETVPLSOGPKPVTTISFANHSCRCMSKLDVYRQVHSITRRSLPATLPQCOA 239
 DB 176 YLSKTLFETVPLSOGPKPVTTISFANHSCRCMSKLDVYRQVHSITRRSLPATLPQCOA 235
 OY 240 NKTCPNTY 247
 DB 236 NKTCPNTY 243

Search completed: November 15, 2001, 10:08:54
 Job time: 146 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: November 15, 2001, 10:06:28 ; Search time 40.97 seconds
(without alignments)
1353.083 Million cell updates/sec

Title: US-09-257-272-2

Perfect score: 419
Sequence: 1 MHSIGFFSVACSLUALLP.....SYSEEVCRCPVSYWQRPQMS 419

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 425026 seqs, 132305027 residues

Word size : 30

Total number of hits satisfying chosen parameters: 3

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database : SPTREMBL.16:*
1: sp-archaea:*
2: sp-bacteria:*
3: sp-fungi:*
4: sp-human:*
5: sp-invertebrate:*
6: sp-mammal:*
7: sp-mhc:*
8: sp-organelle:*
9: sp-phage:*
10: sp-plant:*
11: sp-rodent:*
12: sp-unclassified:*
13: sp-vertebrate:*
14: sp-virus:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	65	15.5	126	11	035757
2	60	14.3	420	6	09XS50
3	31	7.4	418	13	057352

ALIGNMENTS

RESULT 1
035757
ID 035757
AC 035757
DT 01-JAN-1998 (TRENBLREL. 05, Created)
DT 01-JAN-1998 (TRENBLREL. 05, last sequence update)
DE 01-MAR-2001 (TRENBLREL. 16, last annotation update)
OS VASCULAR ENDOTHELIAL GROWTH FACTOR-C (FRAGMENT).
OC Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.

OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-SPRAGUE-DAWLEY; TISSUE=LUNG;
RA Mandirola S.J., Pepper M.S.;
RL Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF010302; AAB63248.1; -
DR HSSP; P15692; 2VPE.
DR InterPro: IPR000072; -
DR pfam: PF00341; PDGF_1.
DR PROSITE: PS0278; PDGF_2; 1.
DR SMART; SM00141; PDGF; 1.
FT NON_TER 1
FT NON_TER 126
SQ SEQUENCE 126 AA; 13977 MW; 8F365AFBC4E037B0 CRC64;

Query Match 15.5%; Score 65; DB 11; Length 126;
Best Local Similarity 100.0%; Pred. No. 4.9e-57;
Matches 65; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 180 YLSKTLFEITVPLSGPKPTISFANHSCRCMSKLDVYRQVHSIIRSLPARTLPCQQA 239
DB 24 YLSKTLFEITVPLSGPKPTISFANHSCRCMSKLDVYRQVHSIIRSLPARTLPCQQA 83
OY 240 NKTCP 244
DB 84 NKTCP 88

RESULT 2
ID 09XS50
AC 09XS50
DT 01-NOV-1999 (TRENBLREL. 12, Created)
DT 01-NOV-1999 (TRENBLREL. 12, last sequence update)
DE 01-MAR-2001 (TRENBLREL. 16, last annotation update)
OS VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
OC Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=HEART;
RA Liu X., Yonekura H., Yamagishi S., Yamamoto Y., Yamamoto H.;
RT *Structure and expression of bovine VEGF family.*;
RL Submitted (MAY-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; AB004275; BAA77687.1; -
DR HSSP; P15692; 1VPE.
DR InterPro: IPR000072; -
DR pfam: PF00341; PDGF_1.
DR PROSITE: PS00249; PDGF_1; 1.
DR PROSITE: PS50278; PDGF_2; 1.
DR SMART; SM00141; PDGF; 1.
KW Signal.
FT SIGNAL 1
FT CHAIN 21
SQ SEQUENCE 420 AA; 46681 MW; 58BA84317A3CE82D CRC64;

Query Match 14.3%; Score 60; DB 6; Length 420;
Best Local Similarity 100.0%; Pred. No. 1.4e-51;
Matches 60; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 172 OCMNSTSTLSKTLFEITVPLSGPKPTISFANHSCRCMSKLDVYRQVHSIIRSLPA 231
DB 173 OCMNSTSTLSKTLFEITVPLSGPKPTISFANHSCRCMSKLDVYRQVHSIIRSLPA 232

RESULT 3
057352

```

ID 057352; PRELIMINARY; PRT; 418 AA.
AC 057352;
DT 01-JUN-1998 (TRENBLREL. 06, Created)
DT 01-JUN-1998 (TRENBLREL. 06, last sequence update)
DT 01-MAR-2001 (TRENBLREL. 16, last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
GN VEGF-C.
OS Coturnix coturnix japonica (Japanese quail).
OC Eukaryota; Metazoa; Chordata; Craniala; Vertebrata; Euteleostomi;
OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC Coturnix.
OX NCBI_TaxID=93934;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=98167900; PubMed=9435294;
RA Eichmann A., Corbel C., Jaffredo T., Breant V., Joukov V., Kumar V.,
RA Altalo K., Le Douarin N.M.;
RT "Avian VEGF-C: cloning, embryonic expression pattern and stimulation
RT of the differentiation of VEGFR2-expressing endothelial cell
RT precursors.";
RL Development 125:743-752(1998).
DR EMBL: Y15837; CAA75799.1; -.
DR HSSP: P15692; IVP.
DR InterPro: IPR000072; -.
DR InterPro: IPR002400; -.
DR Pfam: PF00341; PDGF_1.
DR PRINTS: PRO0438; GFCSKNOT.
DR PRODom: PD001629; -. 1.
DR PROSITE: PS00249; PDGF_1; 1.
DR PROSITE: PS00278; PDGF_2; 1.
DR SMART: SM00141; PDGF_1.
KW Signal.
FT SIGNAL. 1 31
FT CHAIN 111 418 POTENTIAL.
FT SEQUENCE 418 AA; 46839 MW; 099BFCC79151BF2B CRC64;
VASCULAR ENDOTHELIAL GROWTH FACTOR C.

```

```

Query Match 7.4%; Score 31; DB 13; Length 418;
Best Local Similarity 100.0%; Pred. No. 1.6e-22;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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OY 202 SFANHTSCRMKSLDYRQVHSIIRSLPAT 232
DB 201 SFANHTSCRMKSLDYRQVHSIIRSLPAT 231

```

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Search completed: November 15, 2001, 10:08:31
Job time: 123 sec

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GenCore version 4.5
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OM protein - protein search, using sw model

Run on: November 15, 2001, 10:07:12 ; Search time 34.67 Seconds
(without alignments)
612.010 Million cell updates/sec

Title: US-09-257-272-4

Sequence: 350 1 MTVLYPEYMKWKQCLRRKG.....SYSEECRCVPSYWPQMS 350

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 412676 seqs, 60623988 residues

Word size : 30

Total number of hits satisfying chosen parameters: 32

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :

A_Geneseq.0601:*

- 1: /SIDSB/gcgcdata/geneseq/geneseq/AA1980.DAT:*
- 2: /SIDSB/gcgcdata/geneseq/geneseq/AA1981.DAT:*
- 3: /SIDSB/gcgcdata/geneseq/geneseq/AA1982.DAT:*
- 4: /SIDSB/gcgcdata/geneseq/geneseq/AA1983.DAT:*
- 5: /SIDSB/gcgcdata/geneseq/geneseq/AA1984.DAT:*
- 6: /SIDSB/gcgcdata/geneseq/geneseq/AA1985.DAT:*
- 7: /SIDSB/gcgcdata/geneseq/geneseq/AA1986.DAT:*
- 8: /SIDSB/gcgcdata/geneseq/geneseq/AA1987.DAT:*
- 9: /SIDSB/gcgcdata/geneseq/geneseq/AA1988.DAT:*
- 10: /SIDSB/gcgcdata/geneseq/geneseq/AA1989.DAT:*
- 11: /SIDSB/gcgcdata/geneseq/geneseq/AA1990.DAT:*
- 12: /SIDSB/gcgcdata/geneseq/geneseq/AA1991.DAT:*
- 13: /SIDSB/gcgcdata/geneseq/geneseq/AA1992.DAT:*
- 14: /SIDSB/gcgcdata/geneseq/geneseq/AA1993.DAT:*
- 15: /SIDSB/gcgcdata/geneseq/geneseq/AA1994.DAT:*
- 16: /SIDSB/gcgcdata/geneseq/geneseq/AA1995.DAT:*
- 17: /SIDSB/gcgcdata/geneseq/geneseq/AA1996.DAT:*
- 18: /SIDSB/gcgcdata/geneseq/geneseq/AA1997.DAT:*
- 19: /SIDSB/gcgcdata/geneseq/geneseq/AA1998.DAT:*
- 20: /SIDSB/gcgcdata/geneseq/geneseq/AA1999.DAT:*
- 21: /SIDSB/gcgcdata/geneseq/geneseq/AA2000.DAT:*
- 22: /SIDSB/gcgcdata/geneseq/geneseq/AA2001.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	350	100.0	350	20	AAV30519
2	350	100.0	350	20	AAV22321
3	350	100.0	350	21	AAV97145
4	350	100.0	350	22	AAV97577
5	350	100.0	419	20	AAV30518
6	350	100.0	419	20	AAV22320
7	350	100.0	419	21	AAV97144
8	350	100.0	419	22	AAV97570
9	344	98.3	399	20	AAW86237
10	344	98.3	419	18	AAW17837
11	344	98.3	419	18	AAW00932

12	344	98.3	419	19	AAW75740	Human vascular end
13	344	98.3	419	20	AAW86203	Human vascular end
14	344	98.3	419	21	AAW10648	Human VEGF-C protein
15	344	98.3	419	21	AAW29048	Human VEGF-C prote
16	344	98.3	419	21	AAW70749	Human prepro-vascu
17	344	98.3	419	21	AAW70982	Human vascular end
18	344	98.3	419	22	AAW37605	Human VEGF-C. Hom
19	312	89.1	318	20	AAW08284	Human growth facto
20	309	88.3	350	16	AAW82686	Vascular endotheli
21	301	86.0	307	20	AAW86222	Human VEGF-C trunc
22	299	85.4	419	18	AAW13833	Human vascular end
23	296	84.6	302	20	AAW86223	Human VEGF-C trunc
24	291	83.1	237	20	AAW86224	Human VEGF-C trunc
25	286	81.7	292	20	AAW86225	Human VEGF-C trunc
26	263	75.1	419	18	AAW11478	Human vascular end
27	257	73.4	419	19	AAW75751	Vascular endotheli
28	113	32.3	113	20	AAW08285	Human growth facto
29	68	19.4	415	18	AAW00933	Mouse Flt4 recepto
30	68	19.4	415	19	AAW75742	Mouse vascular end
31	31	8.9	418	18	AAW00934	Quail Flt4 recepto
32	31	8.9	418	19	AAW75743	Quail vascular end

ALIGNMENTS

RESULT	ID	AAV30519	standard; Protein; 350 AA.
1	AAV30519		
AC	XX	AAV30519:	
DT	XX	16-NOV-1999 (first entry)	
DE	XX	A truncated vascular endothelial growth factor-2.	
KW	KW	Human vascular endothelial growth factor-2; VEGF-2;	
KW	KW	vascular endothelial cell growth; endothelial cell migration;	
KW	KW	angiogenesis; blood pressure; blood flow; immune system disorder;	
KW	KW	immune cell; cancer; autoimmune disorder; blood protein disorder;	
KW	KW	ataxia telangiectasia; common variable immunodeficiency;	
KW	KW	digeorge syndrome; HIV infection; HTLV-BLV infection;	
KW	KW	leukocyte adhesion deficiency syndrome; lymphopenia;	
KW	KW	phagocyte bactericidal dysfunction; severe combined immunodeficiency;	
KW	KW	Wiskott-Aldrich disorder; anemia; thrombocytopenia; hemoglobinuria;	
KW	KW	allergy; asthma; allergic asthma.	
OS	XX	Homo sapiens.	
PN	XX	WO946364-A1.	
PN	XX	16-SEP-1999.	
PD	XX		
PF	XX	10-MAR-1999; 99MO-US05021.	
PR	XX	13-MAR-1998; 98US-0042105.	
PR	XX	30-JUN-1998; 98US-0107997.	
PA	XX	(HUMA-) HUMAN GENOME SCI INC.	
PI	XX	Rosen CA, Cao L, Hu J;	
PI	XX	WPI; 1999-551389/46.	
DR	XX	N-PDB; AA210524.	
PT	XX	New human vascular endothelial growth factor-2, used for treating, e.g.	
PT	XX	immune disorders and cancers	
PS	XX	Example 2; Fig 2A-D; 222pp; English.	
CC	XX	The present sequence represents a truncated, biologically active form	
CC	XX	of human vascular endothelial growth factor-2 (VEGF-2). The VEGF-2	
CC	XX	polypeptides have activities similar to VEGF. The VEGF-2 polypeptides	

XX 07-FEB-2000: 2000MO-US03047.
 PF
 XX
 PR 08-FEB-1999: 99US-0119179.
 PR 12-FEB-1999: 99US-0119926.
 PR 03-JUN-1999: 99US-0137796.
 PR 22-DEC-1999: 99US-0171505.
 XX
 PA (HUMA-) HUMAN GENOME SCI INC.
 PI Rosen CA, Alderson R, Melder R, Roschke V, Ruben SM.
 XX
 DR MPI, 2000-532862/48.
 DR N-PSDB: AAA52081.
 XX
 PT Treating injury or degeneration of photoreceptors comprises
 PT administering to a subject vascular endothelial growth factor 2
 (VEGF-2)
 XX
 PS Claim 4: Fig 2a-d: 252pp: English.
 PS
 XX
 CC Administration of vascular endothelial growth factor 2 (VEGF-2)
 CC to a patient can be used for treating injury or degeneration of
 CC photoreceptors associated with e.g. angiod streaks, retinitis
 CC pigmentosa, age-related macular degeneration, diabetic retinopathy,
 CC etc. VEGF-2 promotes angiogenesis, the formation of new blood
 CC vessels in the retina.
 CC
 XX
 SQ Sequence 350 AA:

Query Match 100.0%; Score 350; DB 21: Length 350;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 350: Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MTLVPEYWMYKMYKCOLRKGMQHNRQANLSRTEETIKFAAAHYMTIELKSIDNEMRKT 60
 Db 1 mtlvpeywmymkqclrkqirgwmqnrqanlnstteetikaahyntellksidnwrkt 60
 QY 61 QCMPEVYDVGKEFGVANTFFKPCVSVYRCGGCNSGLQCMNTSTSYLSKTLFEIT 120
 Db 61 qcmpevcldvkgkfgvatntffkpcvsvyrcggcnsqglcmntstsyllsktlfeilt 120
 QY 121 VPLSOGPKPTISFANTSCRCMSKLDVYRQVHSIIRSLPAPLPQCOANKTCPTNYMW 180
 Db 121 vplsogpkpvtisfantscrmskldvyrvhsilrslpalcpcqaanktcptnymw 180
 QY 181 NNHICRLAODEPMFSSDAGDSDTDGFHDICGPNKLEDEETCCVCYCRAGLRPASCAPHKE 240
 Db 181 nnhicrlaodedpmfssdagdsdtdgfhdicgpnkeldetccvcrcraglrpascaphke 240
 QY 241 LDNRSCQCVCKNKLPSOGCANREPDENTCOCYCKRTCPNQLNPGKCAECETESPQKC 300
 Db 241 ldnrscqcvcknlfpsoqcanreidentcvcckrtcpnqlnpgkcaecetespqkc 300
 QY 301 LKGGKFFHQTSCSYRRPCTNROKACPEFSYSEEVCRCPVSWQRPQMS 350
 Db 301 lkggkffhqtcscyrtrpcnrgkacepfsyseevcrvpswyqrpqms 350

RESULT 4
 ID AAY97577 standard: Protein; 350 AA.
 XX AAY97577;
 XX
 DT 05-APR-2001 (first entry)
 XX
 DE Human VEGF-2 protein sequence.
 XX
 KW Human: angiogenic protein; wound healing; vascular tissue repair;
 KW peripheral arterial disease; critical limb ischaemia; coronary disease;
 KW angiogenesis; tumour; inflammation; diabetic retinopathy; psoriasis;

KW rheumatoid arthritis; autoimmune disease; allergy; cancer; therapy;
 KW infectious disease; neurodegeneration;
 KW vascular endothelial growth factor-2; VEGF-2.
 XX
 OS Homo sapiens.
 XX
 PN MO200075163-A1.
 XX
 PD 14-DEC-2000.
 XX
 PF 01-JUN-2000: 2000MO-US14925.
 XX
 PR 03-JUN-1999: 99US-0137796.
 XX
 PA (HUMA-) HUMAN GENOME SCI INC.
 PI Rosen CA, Ruben SM, Hu J, Cao L;
 XX
 DR MPI: 2001-071057/08.
 DR N-PSDB: AAA91010.
 XX
 PT New nucleic acid encoding angiogenic proteins, useful e.g. for
 PT promoting healing of wounds and treating peripheral arterial disease,
 PT critical limb ischaemia or coronary disease -
 PS Disclosure: Fig 2: 244pp: English.
 PS
 XX

This sequence is vascular endothelial growth factor-2 (VEGF-2),
 CC which is an angiogenic protein of the invention. The angiogenic proteins
 CC and the DNA sequences encoding them, are used to prevent, treat or
 CC ameliorate disease and to detect diseases, or susceptibility, by
 CC detecting mutations or the presence or amount of angiogenic protein
 CC expression. Particularly they are used to stimulate wound healing,
 CC growth of damaged bone and tissue, and for repair of vascular tissue,
 CC especially peripheral arterial disease, critical limb ischaemia or
 CC coronary disease. Antagonists of the sequences are used to inhibit
 CC angiogenesis in tumours and to treat inflammation (where associated with
 CC increased vascular permeability), diabetic retinopathy, rheumatoid
 CC arthritis or psoriasis. Agonists are also useful for stimulating
 CC (lymph)angiogenesis. The proteins are also used to identify specific
 CC binding agents (potential therapeutic agents) and to raise antibodies.
 CC The antibodies are useful as therapeutic (ant)agonists; for detection,
 CC purification and targeting of proteins for in vivo or in vitro diagnosis
 CC (including imaging) or for therapy (including when linked to e.g. a label
 CC or cytotoxin); and for immunotyping of cells, e.g. for detecting minimal
 CC residual disease or haematopoietic progenitor/stem cells. It is also
 CC contemplated that the sequences might be useful for treating a very wide
 CC range of other disorders, e.g. autoimmune diseases; allergy; cancer;
 CC infectious diseases (viral, bacterial, fungal or parasitic);
 CC neurodegeneration, also as chemotactic agents or for stimulating
 CC regeneration of the nervous system etc.
 XX
 SQ Sequence 350 AA:

Query Match 100.0%; Score 350; DB 22: Length 350;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 350: Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MTLVPEYWMYKMYKCOLRKGMQHNRQANLSRTEETIKFAAAHYMTIELKSIDNEMRKT 60
 Db 1 mtlvpeywmymkqclrkqirgwmqnrqanlnstteetikaahyntellksidnwrkt 60
 QY 61 QCMPEVYDVGKEFGVANTFFKPCVSVYRCGGCNSGLQCMNTSTSYLSKTLFEIT 120
 Db 61 qcmpevcldvkgkfgvatntffkpcvsvyrcggcnsqglcmntstsyllsktlfeilt 120
 QY 121 VPLSOGPKPTISFANTSCRCMSKLDVYRQVHSIIRSLPAPLPQCOANKTCPTNYMW 180
 Db 121 vplsogpkpvtisfantscrmskldvyrvhsilrslpalcpcqaanktcptnymw 180
 QY 181 NNHICRLAODEPMFSSDAGDSDTDGFHDICGPNKLEDEETCCVCYCRAGLRPASCAPHKE 240
 Db 181 nnhicrlaodedpmfssdagdsdtdgfhdicgpnkeldetccvcrcraglrpascaphke 240

Db 181 nhircrlagedfmsdsagddstgfindicgpnkeldetecgcvcraglirpascgphke 240
QY 241 LDRNSCQCCKKKLPPSOGANREFDEMTCCVCCKRTCPRNOLPNPGKACGCTESPQKC 300
Cc |||||||
Db 241 ldrnscgcckkklirpascganrefdentcgcvcckrtcprrnplirpbgkacactespqkc 300
QY 301 LKGRKFFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCPVSYPORPOMS 350
Cc |||||||
Db 301 llkgkffhngtcscyrpctnrqkacepgfsyseevcrvcpsypwqrpqms 350

RESULT 5
AAV30518
ID AAV30518 standard; Protein: 419 AA.
XX
AC AAV30518;
XX
DT 16-NOV-1999 (first entry).
XX
DE Vascular endothelial growth factor-2 (VEGF-2).
KW Human vascular endothelial growth factor-2; VEGF-2;
KW vascular endothelial cell growth; endothelial cell migration;
KW angiogenesis; blood pressure; blood flow; immune system disorder;
KW immune cell; cancer; autoimmune disorder; blood protein disorder;
KW ataxia telangiectasia; common variable immunodeficiency;
KW DiGeorge syndrome; HIV infection; HTLV-BLV infection;
KW leukocyte adhesion deficiency syndrome; lymphopenia;
KW phagocyte bactericidal dysfunction; severe combined immunodeficiency;
KW Miskott-Aldrich disorder; anemia; thrombocytopenia; hemoglobinuria;
KW allergy; asthma; allergic asthma.
XX
OS Homo sapiens.
XX
PN MO9946364-A1.
XX
PD 16-SEP-1999.
XX
PF 10-MAR-1999; 99WO-US05021.
XX
PR 13-MAR-1998; 98US-0042105.
PR 30-JUN-1998; 98US-0107997.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
XX
PI Rosen CA, Cao L, Hu J;
XX
DR WPI: 1999-551399/46.
DR N-PSDB; AAZ10523.
XX
PT New human vascular endothelial growth factor-2, used for treating, e.g.
PT immune disorders and cancers -
XX
PS Claim 12; Fig 1A-E; 222pp; English.
XX
Cc The present sequence represents vascular endothelial growth factor-2
Cc (VEGF-2). The VEGF-2 polypeptides have activities similar to VEGF. The
Cc VEGF-2 polypeptides stimulate the growth of vascular endothelial cells,
Cc stimulate endothelial cell migration, stimulate angiogenesis, decrease
Cc blood pressure, and increase blood flow. The polynucleotides and
Cc polypeptides can be used for preventing, treating or ameliorating a
Cc medical condition. The VEGF-2 polypeptides or polynucleotides may be
Cc useful in treating deficiencies or disorders of the immune system, by
Cc activating or inhibiting the proliferation, differentiation, or
Cc mobilization (chemotaxis) of immune cells. The etiology of these immune
Cc deficiencies or disorders may be genetic, somatic, such as cancer or
Cc some autoimmune disorders, acquired (e.g. by chemotherapy or toxins), or
Cc infectious. Examples of immunologic deficiency syndromes include blood
Cc protein disorders, ataxia telangiectasia, common variable
Cc immunodeficiency, DiGeorge syndrome, HIV infection, HTLV-BLV infection,
Cc leukocyte adhesion deficiency syndrome, lymphopenia, phagocyte
Cc bactericidal dysfunction, severe combined immunodeficiency (SCIDS),
Cc Miskott-Aldrich disorder, anemia, thrombocytopenia, or hemoglobinuria.

Cc They can also be used to modulate emostatic or thrombolytic activity.
Cc Similarly allergic reactions and conditions such as asthma (particularly
Cc allergic asthma) or other respiratory problems, may also be treated.
Cc
SQ Sequence 419 AA:
Cc
Query Match 100.0%; Score 350; DB 20; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 350; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MTLVLPETWKMTKCOLRRGGMOHNEQANLSRTEETITKFAAAHYNTILKSIDNEKRT 60
Cc |||||||
Db 70 mtlvpeywmkykcqlirxsgwqhnrqanlnsrteelkfaahynteilksidnewrkt 129
QY 61 OCMPEVNCIDVCKEFGVATNPFEKPCVSVYRGGCCNSEGLOCNNTSTSYLSTKLFETT 120
Cc |||||||
Db 130 qcmpevncidvckefgvatnltfkpcvsvyrrggccnseglocmntstsyylsklfeit 189
QY 121 VPLSGPRTVTISFANHTSCRCMSKLDVYRQVHSITRRSLPATLPQCAANKTCPTNYMW 180
Cc |||||||
Db 190 vplsgprrvtisfanhtscrcmskldvryqvhslirslpatlpqcaanktcptnymw 249
QY 181 NNHICRCLAQEDPMFSSDAGDDSTGFDHICGPNKELDEBTCQCVCRAGLRPASCGRHKE 240
Cc |||||||
Db 250 nhircrlagedfmsdsagddstgfindicgpnkeldetecgcvcraglirpascgphke 309
QY 241 LDRNSCQCCKKKLPPSOGANREFDEMTCCVCCKRTCPRNOLPNPGKACGCTESPQKC 300
Cc |||||||
Db 310 ldrnscgcckkklirpascganrefdentcgcvcckrtcprrnplirpbgkacactespqkc 369
QY 301 LKGRKFFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCPVSYPORPOMS 350
Cc |||||||
Db 370 llkgkffhngtcscyrpctnrqkacepgfsyseevcrvcpsypwqrpqms 419

RESULT 6
AAV22320
ID AAV22320 standard; Protein: 419 AA.
XX
AC AAV22320;
XX
DT 22-SEP-1999 (first entry)
XX
DE Full length human VEGF2 protein sequence.
XX
DE VEGF2; vascular endothelial growth factor 2; angiogenesis; bone damage;
KW endothelial cell proliferation; tissue damage; therapy.
XX
OS Homo sapiens.
XX
PN US5932540-A.
XX
PD 03-AUG-1999.
XX
PF 24-DEC-1997; 97US-0999811.
XX
PR 24-DEC-1997; 97US-0999811.
PR 08-MAR-1994; 94US-0207550.
PR 06-JUN-1995; 95US-0465968.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
XX
PI Cao L, Hu J, Rosen CA;
XX
DR WPI: 1999-443606/37.
DR N-PSDB; AAX84837.
XX
PT Vascular endothelial growth factor 2 for wound healing and vascular
PT repair
XX
PS Claim 1; Fig 1; 49pp; English.
XX

CC This sequence is the vascular endothelial growth factor 2 (VEGF2),
CC of the invention. The isolated polypeptide is useful for stimulating
CC angiogenesis, by promoting the proliferation of endothelial cells, for
CC the treatment of a wound, or for the treatment of tissue or bone damage.

XX
SO Sequence 419 AA:

Query Match 100.0%; Score 350; DB 20; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 350; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MTVLYPEYWKMYKCOLKRGQWQHNRBOANLSRTEETIKFAAAHYNTIELKSIDNEMRKT 60
DB 70 mtlvlypeywkmykcqltkgqwnreganlnsteeetkfaahyntelklsidnewrkt 129
QY 61 QCMREYCIDVGFEGVATNTFFKPCVSVYRGCCNSBGLOCMNTSTYLSKTLFEIT 120
DB 130 qcmrevcidvgkefgyvalntffkpcvsvyrcgcnseglqcmntstyslsktlfeilt 189
QY 121 VPLSQGKRPVITISFANHTSCRCMSKLDVYRQVHSIIRSLPATLPQCQAANKTCPTNYMW 180
DB 190 vplsqgkrpvitisfanhtscrcmskldvyrqvhsiiirslpatlpqqaanktcptnywm 249
QY 181 NNHICRLAQEDFMFSSDAGDSDTDFHIDICGPKKELDEETCQCVCRAGLRPAACGPHKE 240
DB 250 nnhicrlaqedfmfssdagdsdtdgfhidicgpkkeldeetcqcvcrcaglrpaacgphke 309
QY 241 LDRNSCQCVCNKLFPSCGAGNREFDENTCQCVCRTCPRNQPLNPKKACECESPQKC 300
DB 310 ldrnsqcvcnklfpscganrefdentcqcvcrtcpnqplnpkccacecespqkc 369
QY 301 LKGGKFFHQTSCYRRPCTNRQACEPGFSYSEVCRVPSYWRQPM 350
DB 370 llkxgkffhqtscyrpctnrqacepgfsyseecrvpsywqrpms 419

RESULT 7

ID AAY97144 standard; Protein; 419 AA.

XX AAY97144;

DT 22-DEC-2000 (first entry)

DE Vascular endothelial growth factor-2 (VEGF-2).

XX Vascular endothelial growth factor 2; VEGF-2; retina; angiogenesis;

KW treatment; injury; degeneration; photoreceptors; eye;

KW angiod streaks; retinitis; pigmentosa; human;

KW age-related macular degeneration; diabetic retinopathy.

XX Homo sapiens.

OS Homo sapiens.

PN WO200045835-A1.

PD 10-AUG-2000.

PF 07-FEB-2000; 2000WO-US03047.

PR 08-FEB-1999; 99US-0119179.

PR 12-FEB-1999; 99US-0119926.

PR 03-JUN-1999; 99US-0137796.

PR 22-DEC-1999; 99US-0171505.

PA (HUMA-) HUMAN GENOME SCI INC.

PI Rosen CA, Alderson R, Melder R, Roschke V, Ruben SM;

XX WPI: 2000-532862/48.

DR N-PSDB; AAA52080.

XX Treating injury or degeneration of photoreceptors comprises

PT administering to a subject vascular endothelial growth factor 2
(VEGF-2)

PS Claim 31; Fig 1a-e; 252pp; English.

XX Administration of vascular endothelial growth factor 2 (VEGF-2)

CC to a patient can be used for treating injury or degeneration of

CC photoreceptors associated with e.g. angiod streaks, retinitis

CC pigmentosa, age-related macular degeneration, diabetic retinopathy,

CC etc. VEGF-2 promotes angiogenesis, the formation of new blood

CC vessels in the retina.

XX Sequence 419 AA:

Query Match 100.0%; Score 350; DB 21; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 350; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MTVLYPEYWKMYKCOLKRGQWQHNRBOANLSRTEETIKFAAAHYNTIELKSIDNEMRKT 60
DB 70 mtlvlypeywkmykcqltkgqwnreganlnsteeetkfaahyntelklsidnewrkt 129
QY 61 QCMREYCIDVGFEGVATNTFFKPCVSVYRGCCNSBGLOCMNTSTYLSKTLFEIT 120
DB 130 qcmrevcidvgkefgyvalntffkpcvsvyrcgcnseglqcmntstyslsktlfeilt 189
QY 121 VPLSQGKRPVITISFANHTSCRCMSKLDVYRQVHSIIRSLPATLPQCQAANKTCPTNYMW 180
DB 190 vplsqgkrpvitisfanhtscrcmskldvyrqvhsiiirslpatlpqqaanktcptnywm 249
QY 181 NNHICRLAQEDFMFSSDAGDSDTDFHIDICGPKKELDEETCQCVCRAGLRPAACGPHKE 240
DB 250 nnhicrlaqedfmfssdagdsdtdgfhidicgpkkeldeetcqcvcrcaglrpaacgphke 309
QY 241 LDRNSCQCVCNKLFPSCGAGNREFDENTCQCVCRTCPRNQPLNPKKACECESPQKC 300
DB 310 ldrnsqcvcnklfpscganrefdentcqcvcrtcpnqplnpkccacecespqkc 369
QY 301 LKGGKFFHQTSCYRRPCTNRQACEPGFSYSEVCRVPSYWRQPM 350
DB 370 llkxgkffhqtscyrpctnrqacepgfsyseecrvpsywqrpms 419

RESULT 8

ID AAY97570 standard; Protein; 419 AA.

XX AAY97570;

DT 05-APR-2001 (first entry)

DE Human VEGF-B protein sequence.

XX Human; angiogenic protein; wound healing; vascular tissue repair;

KW peripheral arterial disease; critical limb ischemia; coronary disease;

KW angiogenesis; tumour; inflammation; diabetic retinopathy; psoriasis;

KW rheumatoid arthritis; autoimmune disease; allergy; cancer; therapy;

KW infectious disease; neurodegeneration;

KW vascular endothelial growth factor-B; VEGF-B.

XX Homo sapiens.

PN WO200075163-A1.

PD 14-DEC-2000.

PF 01-JUN-2000; 2000WO-US14925.

PR 03-JUN-1999; 99US-0137796.

PR 03-JUN-1999; 99US-0137796.

PA (HUMA-) HUMAN GENOME SCI INC.

PI Rosen CA, Ruben SM, Hu J, Cao L;
 XX WPI; 2001-071057/08.
 DR N-PSDB; AAA91004.
 XX

PT New nucleic acid encoding angiogenic proteins, useful e.g. for
 PT promoting healing of wounds and treating peripheral arterial disease,
 PT critical limb ischaemia or coronary disease -

Claim 11; Fig 1; 244pp; English.

CC This sequence is vascular endothelial growth factor-B (VEGF-B),
 CC which is an angiogenic protein of the invention. The angiogenic proteins
 CC and the DNA sequences encoding them, are used to prevent, treat or
 CC ameliorate disease and to detect diseases, or susceptibility, by
 CC detecting mutations or the presence or amount of angiogenic protein
 CC expression. Particularly they are used to stimulate wound healing,
 CC growth of damaged bone and tissue, and for repair of vascular tissue,
 CC especially peripheral arterial disease, critical limb ischaemia or
 CC coronary disease. Antagonists of the sequences are used to inhibit
 CC angiogenesis in tumours and to treat inflammation (where associated with
 CC increased vascular permeability), diabetic retinopathy, rheumatoid
 CC arthritis or psoriasis. Agonists are also useful for stimulating
 CC (lymph)angiogenesis. The proteins are also used to identify specific
 CC binding agents (potential therapeutic agents) and to raise antibodies.
 CC The antibodies are useful as therapeutic (antagonists; for detection,
 CC purification and targeting of proteins for in vivo or in vitro diagnosis
 CC (including imaging) or for therapy (including when linked to e.g. a label
 CC or cytotoxin); and for immunotyping of cells, e.g. for detecting minimal
 CC residual disease or haematopoietic progenitor/stem cells. It is also
 CC contemplated that the sequences might be useful for treating a very wide
 CC range of other disorders, e.g. autoimmune diseases; allergy; cancer;
 CC infectious diseases (viral, bacterial, fungal or parasitic);
 CC neurodegeneration, also as chemotactic agents or for stimulating
 CC regeneration of the nervous system etc.

CC Sequence 419 AA:

Query Match 100.0%; Score 350; DB 22; Length 419;

Best Local Similarity 100.0%; Pred. No. 0;
 Matches 350; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MVLVPEYKMYKCOLRKGMQHNREQANLNSRTETIKFAAAHYNTILKSIDNEWRKT 60
 DB |||||||
 OY 70 MVLVPEYKMYKCOLRKGMQHNREQANLNSRTETIKFAAAHYNTILKSIDNEWRKT 129
 DB |||||||
 OY 61 GCMPEVCLDVCKEKGAVATNTFFKPCVSVYRCGGCNSGEGQCMNTSYLSKILFETT 120
 DB |||||||
 OY 130 GCMPEVCLDVCKEKGAVATNTFFKPCVSVYRCGGCNSGEGQCMNTSYLSKILFETT 189
 DB |||||||
 OY 121 VPLSGPKPVTLSFANHTSCRCMSKLDVYROYHSIIRSLPTLPQCOAANKTCPTNYMW 180
 DB |||||||
 OY 190 VPLSGPKPVTLSFANHTSCRCMSKLDVYROYHSIIRSLPTLPQCOAANKTCPTNYMW 249
 DB |||||||
 OY 181 NNHICRCLAQEDFMFSSDAGDSTGDFHDIICGPNKELDEETOCQVCRAGLRAPASGPHKE 240
 DB |||||||
 OY 230 NNHICRCLAQEDFMFSSDAGDSTGDFHDIICGPNKELDEETOCQVCRAGLRAPASGPHKE 309
 DB |||||||
 OY 241 IDRNSQCVCKRKLPPSOGANREPDENTCQVCCKRTCPRNQPLNPGKACCECTESPOK 300
 DB |||||||
 OY 310 IDRNSQCVCKRKLPPSOGANREPDENTCQVCCKRTCPRNQPLNPGKACCECTESPOK 369
 DB |||||||
 OY 301 LTKGKRFHHTQSCYRRPCTNRQKACEPGFSYSEVYRCVPSYWPORPOMS 350
 DB |||||||
 OY 370 LTKGKRFHHTQSCYRRPCTNRQKACEPGFSYSEVYRCVPSYWPORPOMS 419
 DB |||||||

RESULT 9
 AAM86237
 ID AAM86237 standard; protein; 399 AA.
 XX
 AC AAM86237;

XX 16-FEB-1999 (first entry)
 DT
 XX
 DE Human VEGF-C full length sequence.

XX VEGF; VRF; vascular endothelial growth factor; VEGF-related protein;
 KW recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia;
 KW coronary; collateral vessel development; cell growth; migration; heart;
 KW lower limb ischaemia; stroke; peripheral vascular disease; intestine;
 KW wound healing; skin; vascular permeability.

XX Homo sapiens.

XX W09849300-A2.

XX 05-NOV-1998.

XX 20-APR-1998; 98WO-US07801.

XX 25-APR-1997; 97US-0842984.

XX (COLL-) COLLATERAL THERAPEUTICS.

XX Bohlen P;

XX WPI; 1999-009426/01.

PT New truncated vascular endothelial growth factor-related protein
 PT subunits - lack part of the N-terminal sequence, used to stimulate
 PT angiogenesis, e.g. for treating heart disease and ischaemia

Claim 5; Fig 2D; 113pp; English.

CC The invention relates to truncated VRF (vascular endothelial growth
 CC factor (VEGF)-related protein) subunits that have at least one amino
 CC acid N-terminal to the first Cys of the core sequence deleted. Host
 CC cells transformed or transfected with expression vectors containing
 CC nucleic acids encoding the truncated VRF subunits are used to produce
 CC the truncated proteins recombinantly. The truncated VRF subunits,
 CC optionally expressed from gene therapy vectors, have in vivo and in vitro
 CC angiogenic activity and are used to stimulate angiogenesis, particularly
 CC coronary collateral vessel development in cases of cardiac ischaemia; to
 CC stimulate endothelial cell growth and migration in vitro; to treat heart
 CC disease; to treat ischaemia (e.g. cardiac, chronic coronary or chronic
 CC lower limb ischaemia; stroke and peripheral vascular disease); to promote
 CC healing of wounds (of skin or intestines), and to increase vascular
 CC permeability. Sequences AAM86234 to AAM86239 represent full length VRF
 CC sequences from which the truncated fragments are created.

XX Sequence 399 AA:

Query Match 98.3%; Score 344; DB 20; Length 399;

Best Local Similarity 100.0%; Pred. No. 0;
 Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MVLVPEYKMYKCOLRKGMQHNREQANLNSRTETIKFAAAHYNTILKSIDNEWRKT 60
 DB |||||||
 OY 50 MVLVPEYKMYKCOLRKGMQHNREQANLNSRTETIKFAAAHYNTILKSIDNEWRKT 109
 DB |||||||
 OY 61 GCMPEVCLDVCKEKGAVATNTFFKPCVSVYRCGGCNSGEGQCMNTSYLSKILFETT 120
 DB |||||||
 OY 110 GCMPEVCLDVCKEKGAVATNTFFKPCVSVYRCGGCNSGEGQCMNTSYLSKILFETT 169
 DB |||||||
 OY 121 VPLSGPKPVTLSFANHTSCRCMSKLDVYROYHSIIRSLPTLPQCOAANKTCPTNYMW 180
 DB |||||||
 OY 170 VPLSGPKPVTLSFANHTSCRCMSKLDVYROYHSIIRSLPTLPQCOAANKTCPTNYMW 229
 DB |||||||
 OY 181 NNHICRCLAQEDFMFSSDAGDSTGDFHDIICGPNKELDEETOCQVCRAGLRAPASGPHKE 240
 DB |||||||
 OY 230 NNHICRCLAQEDFMFSSDAGDSTGDFHDIICGPNKELDEETOCQVCRAGLRAPASGPHKE 289
 DB |||||||
 OY 241 IDRNSQCVCKRKLPPSOGANREPDENTCQVCCKRTCPRNQPLNPGKACCECTESPOK 300
 DB |||||||

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DB 290 |dnscgvcvknk|lfpqcganrefdentcgcvcrtcprnqplnpgkacacetespgkc 349
OY 301 LKGGKRFHQTSCYRRPCTNRKACBPGFSYSEVCRCPYSW 344
DB 350 llygkktfhqtcscyrtrcprnqkacepgfsyseevcrvpsyw 393

RESULT 10
AAW17837
ID AAW17837 standard; Protein: 419 AA.
AC AAW17837;
XX
XX 13-JAN-1998 (first entry)
XX
XX Human foetal liver kinase A binding protein flk-1bp.
XX
XX Foetal liver kinase 1 binding protein; human; flk-1bp;
XX receptor tyrosine kinase; vasculogenesis; angiogenesis;
XX wound healing; tumour; therapy; antagonist; antibody.
XX
XX Homo sapiens.
XX
XX Key Location/Qualifiers
XX Peptide 1..20
XX /label= Sig-peptide
XX /label= Mat-protein
XX /note= "(Claim 10)"
XX Peptide 21..35
XX /label= N-terminal
XX /note= "(Claim 9)"
XX
XX WO9171442-A1.
XX
XX 15-MAY-1997.
XX
XX 05-NOV-1996; 96WO-US17584.
XX
XX 08-NOV-1995; 95US-0554374.
XX
XX (IMMV ) IMMUNEX CORP.
XX
XX Lyman SD;
XX
XX WPI; 1997-281031/25.
XX
XX N-PSDB; AAT68811.
XX
XX DNA encoding a human foetal liver kinase 1 binding protein - used
XX to treat conditions with insufficient protein, deliver agents to
XX cells and identify antagonists to treat protein-mediated conditions
XX
XX Claim 1: Page 30-32; 43pp; English.
XX
XX This polypeptide comprises a human foetal liver kinase 1 binding
XX protein (flk-1bp) (see AAW17837) that binds to the receptor tyrosine
XX kinase flk-1 expressed on vascular endothelial and other cells.
XX The mature flk-1bp can be secreted from host cells transformed with
XX an expression vector including an isolated flk-1bp cDNA clone (see
XX AAT68811). Flk-1bp can be used to isolate cells to which it binds,
XX for use in studying the roles of such cells and of flk-1 in
XX vasculogenesis and angiogenesis. Angiogenesis inhibition or
XX increased vascularisation may be clinically desirable (e.g. to
XX suppress solid tumour growth or in wound healing, respectively).
XX The flk-1bp can be administered to treat conditions with defective
XX or insufficient flk-1. Polypeptides may also act as carriers to
XX deliver diagnostic/therapeutic agents to cells to which flk-1bp
XX binds, to generate antibodies, and to identify flk-1bp antagonists
XX useful for treating flk-1bp mediated conditions.
XX
XX Sequence 419 AA:

```

```

Query Match 98.3%; Score 344; DB 18; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MTLVPEYWMKMYKCOLRKGGWQHNRQANUNSTRTEETIKFAAHYNTETIKSIDNEMKRT 60
DB 70 mtlvpeywmkmykcqlrkggwqhnrqanunstrteetikaahyntetiksidsnwrkt 129
OY 61 QCMPREVICIDVGEKEFVATWTFKPCVSVYRCGCCNSGLCOMNTSTYLSKTLFEIT 120
DB 130 qcmprvicidvgekefvyatwtfkpcvsvyrcgccnsglcomntstylskltfeit 189
OY 121 VPLSQGPRVTISFANHTSCRCMSKLDVYRQVHSIIRSLPATLPQQAANKTCPTNYW 180
DB 190 vplsqgprvtisfanhtscrcmskldvyrqvhsilrslpatlpqqaanktcptnymw 249
OY 181 NNHICRCLAEDFMFSSDADDDSTDGPHDICGRNKEIDETCCQVCVCRAGLRPASCGRHKE 240
DB 250 nnhicrclagedfmfssdagddsdtdgphdicgrnkeldeetccvcvcraglrpascgphke 309
OY 241 LDRNSQCVCNKLFPSCGANREPDENTCQVCCKRTCPRNQPLNPGKACACETESPOK 300
DB 310 ldrnscgcvcnklfpscganrefdentcgcvcrtcprnqplnpgkacacetespgkc 369
OY 301 LKGGKRFHQTSCYRRPCTNRKACBPGFSYSEVCRCPYSW 344
DB 370 llygkktfhqtcscyrtrcprnqkacepgfsyseevcrvpsyw 413

RESULT 11
AAW00932
ID AAW00932 standard; Protein: 419 AA.
XX
XX AAW00932;
XX
XX 10-NOV-1997 (first entry)
XX
XX Human Flt4 receptor tyrosine kinase ligand VEGF-C.
XX
XX VEGF-C; Flt4; receptor tyrosine kinase; VEGFR-3; human;
XX vascular endothelial growth factor receptor-3; ligand;
XX angiogenesis; wound healing; lymph vessel; lymphangoma;
XX cancer; metastasis; therapy; diagnosis; antibody; inhibitor.
XX
XX Homo sapiens.
XX
XX Key Location/Qualifiers
XX Peptide 1..102
XX /label= Prepro-peptide
XX /note= "preferred active fragment of VEGF-C,
XX retaining Flt4 ligand activity (Claim 12)"
XX Peptide 32..227
XX /note= "preferred active fragment of VEGF-C,
XX retaining Flt4 ligand activity (Claim 15)"
XX Peptide 103..217
XX /note= "preferred active fragment of VEGF-C,
XX retaining Flt4 ligand activity (Claim 12)"
XX Peptide 103..225
XX /note= "preferred active fragment of VEGF-C,
XX retaining Flt4 ligand activity (Claim 13)"
XX Peptide 103..227
XX /note= "preferred active fragment of VEGF-C,
XX retaining Flt4 ligand activity (Claim 14)"
XX Peptide 113..213
XX /note= "preferred active fragment of VEGF-C,
XX retaining Flt4 ligand activity (Claim 10)"
XX Peptide 113..227
XX /note= "preferred active fragment of VEGF-C,
XX retaining Flt4 ligand activity (Claim 11)"
XX Peptide 131..211
XX /note= "preferred active fragment of VEGF-C,
XX retaining Flt4 ligand activity (Claim 9)"
XX Peptide 161..221
XX /note= "preferred active fragment of VEGF-C,

```

FT retaining Flt4 ligand activity (Claim 8)*
 PN WO9705250-A2.
 PD 13-FEB-1997.
 XX
 XX
 PF 01-AUG-1996; 96WO-FI00427.
 XX
 PR 28-JUN-1996; 96US-0671573.
 PR 01-AUG-1995; 95US-0510133.
 PR 12-JAN-1996; 96US-0585895.
 PR 14-FEB-1996; 96US-0601132.
 XX
 PA (UYHE-) UNIV HELSINKI LICENSING LTD OY.
 PI Alitalo K, Joukov V;
 DR WPI: 1997-145688/13.
 DR N-PSDB; AAT84276.
 XX
 PT Flt4 receptor tyrosine kinase ligand and related nucleic acid - used
 PT to modulate growth of endothelial cells and for diagnosis of
 PT endothelial cell diseases
 XX
 PS Claim 7; Page 112-113; 183pp; English.
 XX
 CC This polypeptide comprises the pre-pro sequence of human VEGF-C,
 CC a novel ligand that binds specifically to human Flt4 receptor
 CC tyrosine kinase (VEGFR-3), stimulating phosphorylation of the
 CC receptor. Its sequence was deduced from a cDNA clone (AAT84276)
 CC obtd. from a PC-3 prostatic adenocarcinoma cell (ATCC CRL 1435)
 CC library. The polypeptide, or its active fragments, can be
 CC expressed in transformed or transfectected host cells for use in
 CC claimed methods for detecting endothelial cells (e.g. to image
 CC lymphatic vessels, endothelial venules, Flt4 receptor in
 CC histochmical tissue) and also to modulate the growth of mammalian
 CC endothelial cells (e.g. to accelerate angiogenesis and to promote
 CC VEGF-C, such as antibodies, can be used to control endothelial
 CC cell proliferation, e.g. lymphangioma or metastatic cancer.
 CC Mouse and quail VEGF-C sequences (see AAM00934-35) have also been
 CC isolated.
 CC
 CC Sequence 419 AA:
 SQ

Query Match 98.3%; Score 344; DB 18; Length 419;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MTVLYPEYKMYKCOLRKGGWQHNRQANLNSRTEETIKFAAAHYNTILKSIDNEWRKT 60
 DB ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 DB 70 mcvlypeykmkycqlrkqgwgqhnrqanlnsrteetikfaaahyntelklsidnewrkt 129
 QY 61 GCMPRFVCIIDVGERGVANTFEFKPPCVSVYRCGGCNSBGLQCMNTSRYSKTLFETT 120
 DB ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 DB 130 gcmprfvcidvgergvantfefkppcvsvyrcggcnsbgldcmntsrystklfett 189
 QY 121 VPLSOGPKPVTISFANHSTSCRCMSKLDVYROYHSIIRSLPATLPOCOAANKTCPTNYMM 180
 DB ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 DB 190 vplsgpkrpvtisfanhtscrcmskldvyroyhsilirslpatlpqcgaaantcptnymm 249
 QY 181 NNHICRCLAQEDPMSSADAGDSTDFHDCIPGNKLEDETCCQVCYRAGLRPASCGPHKE 240
 DB ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 DB 250 nnhicrlaqedpmssadagdstdfhdcipgnkeldeetcqvcyraglrpascpghke 309
 QY 241 LDRNSGQCCCKKLPRSSOGGANREPDENTCCVCCKRTCCRNQPLNKGKACETESPOKC 300
 DB ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 DB 310 ldrnsgqccckklprssogganrepdentccvcckrtccrnqplnpgkacacetespgkc 369
 QY 301 LDKGKKFHQOTSCYRPPCTNRQACPEPGFSYSEEVCRCPSPYW 344
 DB ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 DB 370 ldkgkfhqotscyrppctnrgkacepgfsyseevcrvpsyw 413

RESULT 12
 ID AAW75740
 AC AAW75740 standard; Protein; 419 AA.
 XX
 AC AAW75740;
 XX
 DT 20-NOV-1998 (first entry)
 XX
 DE Human vascular endothelial growth factor C protein.
 XX
 KW Flt4; vascular endothelial growth factor C; vascular endothelial cell;
 KW lymphatic endothelial cell; myelopoiesis; angiogenesis; inflammation;
 KW lymphangiogenesis; oedema; elephantiasis; Milroy's disease.
 XX
 OS Homo sapiens.
 XX
 PN WO9833917-A1.
 PD 06-AUG-1998.
 XX
 PF 02-FEB-1998; 98WO-US01973.
 XX
 PR 05-FEB-1997; 97US-0795430.
 XX
 PA (LUDM-) LUDMIG INST CANCER RES.
 PA (UYHE-) UNIV HELSINKI LICENSING LTD.
 XX
 PI Alitalo K, Joukov V;
 DR WPI: 1998-437470/37.
 DR N-PSDB; AAV52576.
 XX
 PT New isolated vascular endothelial growth factor polypeptide(s) -
 PT used to develop products for treating, e.g. cancers, inflammation,
 PT oedema, granulocytopenia or for wound healing or tissue
 PT transplantation
 XX
 PS Claim 1; Page 112-115; 177pp; English.
 XX
 CC The vascular endothelial growth factor C (VEGF-C) polypeptides have
 CC activities affecting growth and migration of vascular endothelial cells,
 CC promoting growth of lymphatic endothelial cells and lymphatic vessels,
 CC increasing vascular permeability, and affecting myelopoiesis. The
 CC products can be used for stimulating angiogenesis, for inhibiting
 CC angiogenesis, for stimulating lymphangiogenesis, treatment or prevention
 CC of inflammation, oedema, elephantiasis, or Milroy's disease. They can
 CC also be used to modulate myelopoiesis, e.g. treating granulocytopenia.
 CC They can also be used for modulating the growth of endothelial cells.
 CC They can also be used to stimulate lymphocyte production and maturation,
 CC and to promote or inhibit trafficking of leucocytes between tissues and
 CC lymphatic vessels or to affect migration in and out of the thymus.
 CC
 CC Sequence 419 AA:
 SQ

Query Match 98.3%; Score 344; DB 19; Length 419;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MTVLYPEYKMYKCOLRKGGWQHNRQANLNSRTEETIKFAAAHYNTILKSIDNEWRKT 60
 DB ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 DB 70 mcvlypeykmkycqlrkqgwgqhnrqanlnsrteetikfaaahyntelklsidnewrkt 129
 QY 61 GCMPRFVCIIDVGERGVANTFEFKPPCVSVYRCGGCNSBGLQCMNTSRYSKTLFETT 120
 DB ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 DB 130 gcmprfvcidvgergvantfefkppcvsvyrcggcnsbgldcmntsrystklfett 189
 QY 121 VPLSOGPKPVTISFANHSTSCRCMSKLDVYROYHSIIRSLPATLPOCOAANKTCPTNYMM 180
 DB ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 DB 190 vplsgpkrpvtisfanhtscrcmskldvyroyhsilirslpatlpqcgaaantcptnymm 249

QY 181 NNHICRCLAOEDFMSSDADDDSTGPHDTCGPNKELDEETCCQVCVCRAGLRPASCGRHKE 240
 Db 250 nmhlcrcrlaagedfmfssdagddstldgfhdcgpnkeldetccqvcvcracrlrpascgphke 309
 QY 241 LDRNSCQVCCKNKLFPSCGAGNREFDENTCQVCCKRTCPNPNOPKGCACETESPQKC 300
 Db 310 ldrnscqvccknklfpagcganrefdentccqvcckrtcpnnpnpgkccacetespqkc 369
 QY 301 LKGKKFHHOTGSCYRRPCTNRKACBPFSYSEVCRVPSYW 344
 Db 370 llygkktfhqtcscyrpctnrqkacepgfsysevcrvpsyw 413

RESULT 13

AA86203 standard; protein: 419 AA.

AA86203;

16-FEB-1999 (first entry)

Human vascular endothelial growth factor (VEGF)-C sequence.

VEGF: VRF: vascular endothelial growth factor: VEGF-related protein;
 recombinant; truncated: gene therapy: angiogenesis: cardiac ischemia;
 coronary: collateral vessel development; cell growth; migration; heart;
 lower limb ischemia; stroke; peripheral vascular disease; intestine;
 wound healing; skin; vascular permeability.

Homo sapiens.

MO9849300-A2.

05-NOV-1998.

20-APR-1998: 98WO-US07801.

25-APR-1997: 97US-0842984.

(COLL-) COLLATERAL THERAPEUTICS.

Bohlen P;

WPI: 1999-009426/01.

New truncated vascular endothelial growth factor-related protein
 subunits - lack part of the N-terminal sequence, used to stimulate
 angiogenesis, e.g. for treating heart disease and ischemia

Disclosure: Fig 1, 113pp: English.

This represents the amino acid sequence of human vascular endothelial
 growth factor (VEGF)-C protein. The invention provides truncated VRF
 (VEGF-related protein) subunits that have at least one amino acid
 N-terminal to the first Cys of the core sequence deleted. Host cells
 transfected or transfected with expression vectors containing nucleic
 acids encoding the truncated VRF subunits are used to produce the
 truncated proteins recombinantly. The truncated VRF subunits, optionally
 expressed from gene therapy vectors, have in vivo and in vitro angiogenic
 activity and are used to stimulate angiogenesis, particularly coronary
 collateral vessel development in cases of cardiac ischemia; to stimulate
 endothelial cell growth and migration in vitro; to treat heart disease;
 to treat ischemia (e.g. cardiac, chronic coronary or chronic lower limb
 CC ischemia; stroke and peripheral vascular disease); to promote healing of
 wounds (of skin or intestines), and to increase vascular permeability.

Sequence 419 AA;

Query Match 98.3%; Score 344; DB 20; Length 419;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MTVLYPEYWKMYKCOLRKGCWQHNRBOANLSRTEETIKFAAHYNTTEILKSIDNEMKRT 60
 Db 70 mtlvlypeywkmykcqlrk9gwgqhnreaganlnsrteetlikfaahyntteilksidnewrkt 129
 QY 61 QCMPREVCIOVGKEFGVATMPPKPCVSVYRCGGCNSGLOCMNSTYLSLTFEIT 120
 Db 130 qcmprcviovgkefgvatmfpkpcvsvyrcggcnsseqigcmnstyslsltfelt 189
 QY 121 VPLSGRPYTISEFANHTSCRCMSKLDVYRQVHSIIRSLPATLPQCAANKTCPTNYMW 180
 Db 190 vplsggpkpytlisefantlscrcmskldvyrqvhsilrrslpatlpqgaanktcptnywm 249
 QY 181 NNHICRCLAOEDFMFSSDADDDSTGPHDTCGPNKELDEETCCQVCVCRAGLRPASCGRHKE 240
 Db 250 nmhlcrcrlaagedfmfssdagddstldgfhdcgpnkeldetccqvcvcracrlrpascgphke 309
 QY 241 LDRNSCQVCCKNKLFPSCGAGNREFDENTCQVCCKRTCPNPNOPKGCACETESPQKC 300
 Db 310 ldrnscqvccknklfpagcganrefdentccqvcckrtcpnnpnpgkccacetespqkc 369
 QY 301 LKGKKFHHOTGSCYRRPCTNRKACBPFSYSEVCRVPSYW 344
 Db 370 llygkktfhqtcscyrpctnrqkacepgfsysevcrvpsyw 413

RESULT 14

AA810648 standard; Protein: 419 AA.

AA810648;

19-JUN-2001 (first entry)

Human VEGC protein.

VEGF-X: vascular endothelial growth factor: human: vulnery: cyrostatic;
 antirheumatic; antiarthritic; antipsoriatic; antidiabetic; treatment;
 angiogenesis regulator; vascularization regulator; cancer; psoriasis;
 rheumatoid arthritis; diabetic retinopathy; blood vessel; organ repair;
 tissue regeneration; tissue repair; wound; dermal ulcer; pressure sore;
 venous sore; diabetic ulcer; burns; skin graft growth; VEGC.

Homo sapiens.

WO200037641-A2.

29-JUN-2000.

21-DEC-1999: 99WO-US30503.

22-DEC-1998: 98GB-0028377.

18-MAR-1999: 99US-0124967.

08-NOV-1999: 99US-0164131.

(JANC) JANSSEN PHARM NV.

Gordon RD, Sprengel JJ, Yon JR, Dijkmans JH, Goslowska A;

Dhanaraj SN, Xu J;

WPI: 2000-442669/38.

New vascular endothelial growth factor protein, useful for treating or
 preventing diseases associated with inappropriate angiogenesis activity
 such as cancer, rheumatoid arthritis, psoriasis and wounds -

Disclosure: Fig 11; 127pp: English.

This invention describes a novel vascular endothelial growth factor-X
 (VEGF-X) protein (Ia) and its encoding polynucleotide (IIa) which has
 vulnery, cyrostatic, antirheumatic, antiarthritic, antipsoriatic and
 antidiabetic activity and acts as an angiogenesis and vascularization
 regulator. An antisense molecule of the invention is useful for treating
 or preventing cancer, rheumatoid arthritis, psoriasis and diabetic

CC retinopathy by inhibiting angiogenic activity or inappropriate
CC vascularization including formation and proliferation of new blood
CC vessels, growth and development of tissues, tissue regeneration and organ
CC and tissue repair in a subject. The products of the invention are useful
CC for preparing medicaments for treating wounds such as dermal ulcers,
CC pressure sores, venous sores, diabetic ulcers and burns and to promote
CC skin graft growth, tissue repair, proliferation of new blood vessels,
CC tissue regeneration and organ repair by promoting angiogenic activity or
CC vascularization. This sequence represents the human VEGF protein used
CC to illustrate the method of the invention.

XX
Sequence 419 AA:

Query Match 98.3%; Score 344; DB 21; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

YY 1 MTVLPEYWKWKYKCOLRKGWQHNRQANLNRTEETIKFAAHYNTLKSIDNEWRT 60
DB mtlvlypeywkmykqllrkgywqhnrqanlnsrteetlkfaahyntelklsidnewrkt 129
YY 61 QCMPEVCIIDVKEKRGVANTPEKPCVSVYRCGGCNSGLQCMNTSTSYLTKLFETT 120
DB |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| 130
qcmpevciidvkekgvqntpfkpcvsvyrcggcnssegldcmntstsyllsklftelt 189
YY 121 VPLSGPKPVTISFANHNSCRMSKLDVYRQVHSIIRSLPRTLPOCOANAKTCPTNYMW 180
DB |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| 190
vplsgpkpvtisfanhtscrmksldvyryghsliirslpctlpqcgaaanktcptnymw 249
YY 181 NNHICRCLAQEDFMSSDAAGDSTDFHDCGPNKELBDETCQVCVRAGLRASGCPHKE 240
DB |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| 250
nnhlicrclaqedfmssdagdstdfhdcgpnkelbdeetcqvcvraglrpsacgphke 309
YY 241 LDRNSCOCVCKNKLFPSCOGANREFDENTCOCVCKRTCPRNOLPLPGKACCTESPQKC 300
DB |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| 310
ldrnscocvcknklfpscoganrefdentcgcvcckrtcpnqplnpgkacectespqkc 369
YY 301 LKGRKFFHHQTCSCYRRPCTNRQKACEPFSYSEEVCRCPSPYW 344
DB |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| 370
llkgrkffhhqtcscyrpctnrqkacepgfsyseevcrpcpsyw 413

RESULT 15

AAB29048
ID AAB29048 standard; Protein; 419 AA.

AC AAB29048;

XX 31-JAN-2001 (first entry)

XX Human VEGF-C protein sequence.

XX Human: Flt4; fms-like tyrosine kinase 4; lymphoedema;
KW vascular endothelial growth factor receptor 3; VEGFR-3;
KM Milroy-Nonne syndrome; lymphoedema praecox; VEGF-C;
XX vascular endothelial growth factor C.

XX Homo sapiens.

XX MO200058511-A1.

XX 05-OCT-2000.

XX 26-MAR-1999; 99WO-US06133.

XX 26-MAR-1999; 99WO-US06133.

XX (LUDM-) LUDWIG INST CANCER RES.

XX (UYHE-) UNIV HELSINKI LICENSING LTD OY.

XX (UYPI-) UNIV PITTSBURGH.

XX Ferrell RE, Altalo K, Finegold DN, Karkkainen M;

XX WPI; 2000-679298/66.
DR N-PSDB; AAC62406.

XX Screening a human subject for increased risk of developing a lymphatic
PT disorder, comprises assaying a nucleic acid to determine a mutation
PT altering the sequence of a vascular endothelial growth factor
PT receptor-3 -

XX Disclosure; Page 60-61; 76pp; English.

XX The present sequence is the protein sequence for the human vascular
CC endothelial growth factor C (VEGF-C). It was used to demonstrate the
CC methods of the invention, which involve the screening of individuals to
CC determine which vascular endothelial growth factor receptor 3 (VEGFR-3,
CC also known as Flt4 or fms-like tyrosine kinase 4) alleles they possess
CC and thus their likelihood of developing hereditary lymphoedema.
CC Conditions associated with lymphoedema include Milroy-Nonne syndrome,
CC which is early onset lymphoedema and lymphoedema praecox, which is late
CC onset.

XX Sequence 419 AA:

Query Match 98.3%; Score 344; DB 21; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

YY 1 MTVLPEYWKWKYKCOLRKGWQHNRQANLNRTEETIKFAAHYNTLKSIDNEWRT 60
DB mtlvlypeywkmykqllrkgywqhnrqanlnsrteetlkfaahyntelklsidnewrkt 129
YY 61 QCMPEVCIIDVKEKRGVANTPEKPCVSVYRCGGCNSGLQCMNTSTSYLTKLFETT 120
DB |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| 130
qcmpevciidvkekgvqntpfkpcvsvyrcggcnssegldcmntstsyllsklftelt 189
YY 121 VPLSGPKPVTISFANHNSCRMSKLDVYRQVHSIIRSLPRTLPOCOANAKTCPTNYMW 180
DB |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| 190
vplsgpkpvtisfanhtscrmksldvyryghsliirslpctlpqcgaaanktcptnymw 249
YY 181 NNHICRCLAQEDFMSSDAAGDSTDFHDCGPNKELBDETCQVCVRAGLRASGCPHKE 240
DB |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| 250
nnhlicrclaqedfmssdagdstdfhdcgpnkelbdeetcqvcvraglrpsacgphke 309
YY 241 LDRNSCOCVCKNKLFPSCOGANREFDENTCOCVCKRTCPRNOLPLPGKACCTESPQKC 300
DB |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| 310
ldrnscocvcknklfpscoganrefdentcgcvcckrtcpnqplnpgkacectespqkc 369
YY 301 LKGRKFFHHQTCSCYRRPCTNRQKACEPFSYSEEVCRCPSPYW 344
DB |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| 370
llkgrkffhhqtcscyrpctnrqkacepgfsyseevcrpcpsyw 413

Search completed: November 15, 2001, 10:07:12
Job time: 44 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: November 15, 2001, 10:07:43 ; Search time 25.79 seconds

(without alignments)
1033.776 Million cell updates/sec

Title: US-09-257-272-4

Perfect score: 350
Sequence: 1 MTVLPEYKMKYKQLRKGC.....SYSEVCKVPSYMPQMS 350Scoring table: OLIGO
Gapop 60.0 , Gapept 60.0

Searched: 219241 seqs, 76174552 residues

Word size : 30

Total number of hits satisfying chosen parameters: 1

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database : PIR_68:*

1: PIR1:*\n2: PIR2:*\n3: PIR3:*\n4: PIR4:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	344	98.3	419	2 S69207	vascular endothel

ALIGNMENTS

RESULT 1
S69207
vascular endothelial growth factor C precursor - human
N:Alternate names: FLT4 ligand DHM
C:Species: Homo sapiens (man)
C>Date: 27-Apr-1996 #sequence.revision 01-Nov-1996 #text.change 08-Oct-1999
C:Accession: S69207; S61795; S71443; S69208; G02659
R:Joukov, V.; Pajusola, K.; Kaipainen, A.; Chillov, D.; Lahtinen, I.; Kukk, E.; Saksela, EMO J. 15, 1751, 1996
A:Title: Corrigendum: A novel vascular endothelial growth factor, VEGF-C, is a ligand for A:Reference number: S69207; MUID:96203094
A:Accession: S69207
A:Status: nucleic acid sequence not shown
A:Molecule type: mRNA
A:Residues: 1-419 <CDS>
A:Cross-references: EMBL:X94216; NID:g1177488; PIDN:CAA63907.1; PID:e221096; PID:g118200
A:Note: the nucleotide sequence was submitted to the EMBL Data Library, December 1995
A:Note: only a part of the translation is shown
R:Joukov, V.; Pajusola, K.; Kaipainen, A.; Chillov, D.; Lahtinen, I.; Kukk, E.; Saksela, EMO J. 15, 290-298, 1996
A:Title: A novel vascular endothelial growth factor, VEGF-C, is a ligand for the Flt4 (V A:Reference number: S61795; MUID:96178224

A:Accession: S61795
A:Status: nucleic acid sequence not shown; not compared with conceptual translation
A:Molecule type: mRNA
A:Residues: 70-419 <JOU>
A:Note: this sequence has been revised in reference S69207
A:Accession: S71443
A:Molecule type: protein
A:Residues: 'X', 104-120 <JOU2>
R:Lee, J.; Gray, A.; Yuan, J.; Luo, S.M.; Avraham, H.; Wood, W.I.
Submitted to the EMBL Data Library, December 1995
A:Description: Vascular endothelial growth factor related protein (VRP): A ligand and A:Reference number: S69208
A:Accession: S69208
A:Molecule type: mRNA
A:Residues: 1-419 <LEE>
A:Cross-references: EMBL:U43142; NID:g1150988; PIDN:AAA85214.1; PID:g1150989
R:Morris, J.C.
Submitted to the EMBL Data Library, May 1996
A:Reference number: H01557
A:Accession: G02659
A:Status: preliminary; translated from GB/EMBL/DDAJ
A:Molecule type: mRNA
A:Residues: 1-419 <MOR>
A:Cross-references: EMBL:U58111; NID:g1373426; PIDN:AAB02909.1; PID:g1373427
C:Genetics:
A:Gene: GDB:VEGFC; VRP
A:Cross-references: GDB:3890883; OMIM:601528
F:1-12/Domain: signal sequence #status predicted <Sig>
F:13-102/Domain: propeptide #status predicted <Pro>
F:103-419/Product: vascular endothelial growth factor C #status experimental <Mat>

Query Match 98.3%; Score 344; DB 2; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY	1	MTVLPEYKMKYKQLRKGGMOHNRBOANLSRTEETIKFAAHYNTETILKSIDNEWRKT	60
DB	70	MTVLPEYKMKYKQLRKGGMOHNRBOANLSRTEETIKFAAHYNTETILKSIDNEWRKT	129
QY	61	QCMPEVCIQVGEKFEVATNTFFKPCVSVYRCGGCCNSGLCCMNTSTYLSKTLFEIT	120
DB	130	QCMPEVCIQVGEKFEVATNTFFKPCVSVYRCGGCCNSGLCCMNTSTYLSKTLFEIT	189
QY	121	VPLSQGPKPTVTSFANHTSCRCMSKLDVYRQVHSIIRSLPATLPQCAANKTCPTNYMW	180
DB	190	VPLSQGPKPTVTSFANHTSCRCMSKLDVYRQVHSIIRSLPATLPQCAANKTCPTNYMW	249
QY	181	NNHICRCLAQEDFMFSSDAGDDSTDFHDCGPKKELDEETCCQCVCAAGLRPASCGPHKE	240
DB	250	NNHICRCLAQEDFMFSSDAGDDSTDFHDCGPKKELDEETCCQCVCAAGLRPASCGPHKE	309
QY	241	LDNRSCQCVCKNKLFPSCCANREFDENTCQVCCKRTCPNPOLNPKGCACECTESPQKC	300
DB	310	LDNRSCQCVCKNKLFPSCCANREFDENTCQVCCKRTCPNPOLNPKGCACECTESPQKC	369
QY	301	LLGKKFHHQTCSCYRRPCTNRQACPEGFSYSEVCKVPSYW	344
DB	370	LLGKKFHHQTCSCYRRPCTNRQACPEGFSYSEVCKVPSYW	413

Search completed: November 15, 2001, 10:07:43
Job time: 75 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: November 15, 2001, 10:08:54 ; Search time 16.77 Seconds

(without alignments)
714.933 Million cell updates/sec

Title: US-09-257-272-4

Perfect score: 350

Sequence: 1 MVLVPEYWKWKYKCOLRRKG.....SYSEVVCRCVPSYWPORPOMS 350

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 93435 seqs, 34255486 residues

Word size : 30

Total number of hits satisfying chosen parameters: 2

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database : SwissProt_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	344	98.3	419	1 VEGC_HUMAN	p49767 homo sapien
2	68	19.4	415	1 VEGC_MOUSE	p97953 mus muscul

ALIGNMENTS

Result	ID	VEGC_HUMAN	STANDARD;	PRT;	419 AA.
AC	p49767:				
DT	01-OCT-1996 (Rel. 34, Created)				
DT	01-OCT-1996 (Rel. 34, Last annotation update)				
DT	01-OCT-2000 (Rel. 40, Last annotation update)				
DE	VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (VASCULAR				
DE	ENDOTHELIAL GROWTH FACTOR RELATED PROTEIN) (VRP) (FLT4 LIGAND) (FLT4-				
DE	L).				
GN	VEGFC.				
OS	Homo sapiens (Human).				
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;				
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominoidea; Homo.				
OX	NCBI_TaxID=9606;				
RN	[1]				
RP	SEQUENCE FROM N.A., AND SEQUENCE OF 103-120.				
RX	MEDLINE=96178224; PubMed=8617204;				
RA	Joukov V., Pajusola K., Kaipainen A., Chillov D., Lahlainen I., Kuk E.,				
RA	Saksela O., Kalkkinen N., Allitalo K.;				
RT	"A novel vascular endothelial growth factor, VEGF-C, is a ligand for				
RL	the Flt4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases.";				
RL	EMBO J. 15:290-298(1996).				
RN	[2]				
RP	ERRATUM.				
RX	MEDLINE=96203094; PubMed=8612600;				

Query Match	Score	DB 1;	Length	419;
Best Local Similarity	98.3%;			
Matches	344;	Conservative	0;	Mismatches
			0;	Indels
			0;	Gaps
			0;	
QY	1	MTVLVPEYWKWKYKCOLRRKGQHNHREQANLSRFEETIKFAAAYNTEILKSINDENRKT	60	
DB	70	MTVLVPEYWKWKYKCOLRRKGQHNHREQANLSRFEETIKFAAAYNTEILKSINDENRKT	129	
QY	61	QCMREVCIDGKEFGVATNFFPCVSVYRCGCCNBSGLQCMNTSTYSLRLEIT	120	
DB	130	QCMREVCIDGKEFGVATNFFPCVSVYRCGCCNBSGLQCMNTSTYSLRLEIT	189	
QY	121	VPLSOGKRPVYISFANNTSCRCMSKLDVYRQVSHIIRSLPATLPCCQANKTCPTNYMW	180	
DB	190	VPLSOGKRPVYISFANNTSCRCMSKLDVYRQVSHIIRSLPATLPCCQANKTCPTNYMW	249	

```

OY 181 NNHICRLAODEDMESSDAGDSTDFHIDICGPNKELDEETCCQVCRAGLRASCPHKE 240
DB 250 NNHICRLAODEFMFESSDAGDSTDFHIDICGPNKELDEETCCQVCRAGLRASCPHKE 309
OY 241 LDRNSCCQVCKNKLFPSSCGANREFEDNCCQCKRTCRPNOLNKGKACBETESPCK 300
DB 310 LDRNSCCQVCKNKLFPSSCGANREFEDNCCQCKRTCRPNOLNKGKACBETESPCK 369
OY 301 LKGGKFFHQTSCYRRPCTNRKACEPFSYSEEVCRCPVSYW 344
DB 370 LKGGKFFHQTSCYRRPCTNRKACEPFSYSEEVCRCPVSYW 413

RESULT 2
VEGC_MOUSE STANDARD: PRT: 415 AA.
AC P97953:
DT 15-JUL-1998 (rel. 36, Created)
DT 15-JUL-1998 (rel. 36, Last sequence update)
DT 30-MAY-2000 (rel. 39, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (FLT4 LIGAND)
DE (FLT4-L).
GN VEGFC.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-BALB/C;
RX MEDLINE=97164697; PubMed=9012504;
RA Kulk E., Lymboussaki A., Taira S., Kaipainen A., Jeltsch M.,
RA Joukov V., Allitalo K.;
RT "VEGF-C receptor binding and pattern of expression with VEGFR-3
RT suggests a role in lymphatic vascular development.";
RL Development 122:3829-3837(1996).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN-BALB/C;
RX MEDLINE=9738482; PubMed=9247316;
RA Fitz L.J., Morris J.C., Towler P., Long A., Burgess P., Greco R.,
RA Wang J., Gassaway R., Nickbarg E., Kovacic S., Charette A.,
RA Giannotti J., Finerty H., Zollner H., Beier D.R., Leak L.V.,
RA Turner K.J., Wood C.R.;
RT "Characterization of murine Flt4 ligand/VEGF-C.";
RL Oncogene 15:613-618(1997).
CC -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC CELL GROWTH.
CC -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED (BY SIMILARITY).
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC -----
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CC -----
CC EMBL: U73620; AAC52984.1; -
CC EMBL: U58112; AAB46707.1; -
CC HSSP: P15692; 1VPF.
CC MGD: MGI:109124; Vegfc.
CC InterPro: IPR000072; -
CC InterPro: IPR002400; -
CC Pfam: PF00341; PDGF; 1.
CC PRINTS: PR00438; GFCYSKNOT.
CC PROSITE: PS00249; PDGF_1; 1.
CC PROSITE: PS00278; PDGF_2; 1.
CC Mitogen: Growth factor; Glycoprotein; Signal: Repeat.
FT SIGNAL 1 ? 98 POTENTIAL.
FT PROPEP ? 98 POTENTIAL.

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FT CHAIN 99 415 VASCULAR ENDOTHELIAL GROWTH FACTOR C.
FT DOMAIN 271 361 4 X 24 AA TANDEM REPEATS.
FT REPEAT 271 294 1.
FT REPEAT 295 318 2.
FT REPEAT 319 342 3.
FT REPEAT 343 361 4 (PARTIAL).
FT CARBOHYD 171 171 N-LINKED (GLCNAC. . .) (POTENTIAL).
FT CARBOHYD 201 201 N-LINKED (GLCNAC. . .) (POTENTIAL).
FT CARBOHYD 236 236 N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ SEQUENCE 415 AA; 46471 MW; D9D3DD3CECC659D6 CRC64;

Query Match 19.4%; Score 68; DB 1; Length 415;
Best local Similarity 100.0%; Pred. No. 3.6e-64;
Matches 68; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 111 YLSKTLFEITVPLSGPKPVTTISFANHSCRCMSKLDVROYHSITRSLPATLPCCOA 170
DB 176 YLSKTLFEITVPLSGPKPVTTISFANHSCRCMSKLDVROYHSITRSLPATLPCCOA 235
OY 171 NKTCPNTY 178
DB 236 NKTCPNTY 243

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Search completed: November 15, 2001, 10:08:54
Job time: 146 sec


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ID 057352      PRELIMINARY;      PRT:      418 AA.
AC 057352;
DT 01-JUN-1998 (TRENBLREL. 06, Created)
DT 01-JUN-1998 (TRENBLREL. 06, Last sequence update)
DT 01-MAR-2001 (TRENBLREL. 16, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
GN VEGF-C.
OS Colurnix coturnix japonica (Japanese quail).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC Colurnix.
OX NCBI_TaxID=93934;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=96167900; PubMed=9435294;
RA Eichmann A., Cordel C., Jafredo T., Breant V., Joukov V., Kumar V.,
RA Alltalo K., Le Douarin N.M.;
RT "Avian VEGF-C: cloning, embryonic expression pattern and stimulation
RT of the differentiation of VEGFR2-expressing endothelial cell
RT precursors.";
RL Development 125:743-752(1998).
DR EMBL; Y15837; CAA75799.1; -.
DR HSSP; P15692; IVP.
DR InterPro: IPR000072; -.
DR InterPro: IPR002400; -.
DR Pfam: PF00341; PDGF_1.
DR PRINTS: PR00438; GFCSKNOT.
DR PRODOM: PD001629; -. 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
DR SMART; SM00141; PDGF; 1.
KW Signal.
FT SIGNAL.
FT CHAIN.
FT SEQUENCE 418 AA; 46839 MW; 099BFCC79151BF2B CRC64;

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Query Match      8.9%; Score 31; DB 13; Length 418;
Best Local Similarity 100.0%; Pred. No. 1.4e-24;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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OY 133 SFANHTSCRCMSKLDVYRQVHSIIRSLPAT 163
   ||||||||||||||||||||||||||||
DB 201 SFANHTSCRCMSKLDVYRQVHSIIRSLPAT 231

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Search completed: November 15, 2001, 10:08:31
Job time: 123 sec

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